Validating the Narrative Recovery Style Scale (NRSS) in a sample of individuals with serious mental illness

And Clinical Research Portfolio

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October 2018

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Submitted in partial fulfilment of the requirements for the degree of

Doctorate in Clinical Psychology

To Faye, Mona and Magnus:

Three exceptionally good reasons for missing a deadline.

And in memory of Forbes and Godfrey McFall:

We will miss you forever.

Acknowledgements

Firstly, and most importantly, I wish to thank all the individuals who participated in the project. Your openness and willingness to share sometimes painful aspects of your lives with a relative stranger has left me feeling quite moved at times. I hope this thesis can do your rich and colourful narratives justice. Thank you also to Alan Douglas at Bipolar Scotland for his enthusiasm for the project and his support with recruitment.

Thank you to my supervisor Professor Andrew Gumley for your continued support, wisdom and endless patience throughout this process. Little did either of us really know what you signed up for and I am truly grateful for your level of commitment to see my training to its conclusion.

I would also like to extend thanks to my back-up research supervisor, Dr Hamish McLeod, for helping shape and develop the project, particularly in the early stages. Thanks also to Dr Emma Rhodes and Dr Erin Toal for collaborating on the study with me and collecting and sharing data. Returning to the project was a far less daunting prospect knowing that you had been at the helm. Particular thanks to Emma for her continued involvement in the project long after her role was complete.

I would like to thank my parents for always encouraging me to follow the path of my choosing and for their continued support when said path takes a circuitous route. Thank you to friends for your support, distraction and dancing. It takes a village and I feel fortunate to be part of such a brilliant community. Special thanks to Debby and to Linda for caring for my children like their own, and to Eilidh for reminding me of my strengths and for boosting my confidence when I needed it most. Thanks for providing perspective and constantly reminding me why I'm doing this. You have such faith in me that I'd probably attempt a thoracic aortic dissection repair with you cheerleading in the gallery. Seriously.

Finally thank you to Patrick, for your unwavering support and belief in me. Know that I have the same steadfast belief in you.

Gillian Fraser, Ratho, 22nd October 2018

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CHAPTER 1

SYSTEMATIC REVIEW

Recovery style and psychosis: a systematic review of measures and outcomes

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October 2018

Chapter Word Count: 10,068 words (including tables, figures, references)

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Submitted in partial fulfilment of the degree of Doctorate in Clinical Psychology (D.Clin.Psy.)
Prepared according to submission guidelines for Schizophrenia Bulletin (Appendix 1.1)

Abstract

Objectives*:* Recovery style may be an important clinical variable which offers a way of understanding how people react to and cope with the experience of mental ill health. It has been subject to study since the 1970s, but never systematically reviewed. This review sought to systematically identify, summarise and critique articles that investigated recovery style amongst individuals with psychosis. **Method***:* A computerised and manual search of the literature from 1988 onwards was conducted to identify articles containing a clearly defined measure of recovery style and participants who had experienced psychosis. All articles were systematically reviewed and rated for risk of bias. **Results***:* 31 articles were identified comprising 28 studies with a total of 2,845 participants (67.6% men; n=1922) with a mean age of 36.6 years. All were recruited via convenience sampling from a range of international sites. The two predominant measures used to assess recovery style were the Integration and Sealing Over Scale (ISOS) (n=884;31.1%) and the Recovery Style Questionnaire (RSQ) (n=2,140;75.2%). The mean reliability ratings for the RSQ and ISOS were α=0.68 and α=0.895 respectively and the two measures were significantly correlated (mean r=0.71). We found no evidence of factor analysis examining the underlying structure of either measure and there was a lack of consistency in how the measures were scored and interpreted. A wide variety of outcomes were examined using a large number of measures, resulting in mixed findings regarding a relationship between recovery style and outcome. The most consistent relationships were found between greater sealing over and increased negative symptoms, lack of insight, poorer global functioning and service engagement. **Conclusions***:* Claims regarding the reliability and validity of tools used to measure recovery style tend to be over-inflated in the literature. A number of methodological limitations are highlighted which emphasise the need to be circumspect in drawing conclusions. Nevertheless, recovery style provides a potentially useful framework for understanding how people cope with living with the experience of mental illness.

Keywords: Sealing over, integration, RSQ, ISOS, schizophrenia

Introduction

Recovery style refers to the attitudes that people hold towards their illness and how they cope with the experience of having an illness[1]. The idea that individuals may have different styles of recovery was first introduced by Mayer-Gross in 1920. He described the response patterns of psychosis patients and suggested that individuals tend to hold fairly fixed views about their illness which may influence illness course and outcome[2]. McGlashan, Levy and colleagues developed this idea further in a series of papers[3,4,5,6,7] and proposed two distinct styles of recovery - '*Integration'* and '*Sealing Over'* - based on the narratives of a group of psychosis patients.

An 'integrative' recovery style is characterised by the individual acknowledging the important effect their illness has had on their life. They accept responsibility for their psychotic experiences which may affect their self-esteem, perhaps resulting in shame, guilt, depression, confusion and self-doubt. Their psychotic experiences may contain highly personal themes and show continuity with their previous lives. The individual may be able to identify both pleasure and pain associated with their illness and is curious to explore and understand their experiences, often eliciting the help of others to help do so.

Individuals who have a tendency to 'seal over' during their recovery tend to discuss their psychotic experiences as isolated events with little significance to their lives. They take no responsibility for their experiences and may view themselves as a passive and helpless victim. No links are made between the psychotic experience and prior personal problems and the experience is viewed in entirely negative terms. The individual is disinclined to explore their illness for any source of meaning or information and prefers not to dwell on the past.

Much of the early research in the 1970s and 80s into recovery style focused initially on describing and defining the constructs of sealing over and integration. Research was predominantly observational, qualitative or case study, and often psychodynamic in nature with investigation focusing on outcomes such as art productions[8] or defensive constellations[9]. Many of the studies took place in an inpatient setting (the National Institute of Mental Health Clinical Research Unit) with chronic patients. Until the introduction of a

formal scale to measure recovery style in 1977, classification of recovery style was often made using clinical judgement based on global impressions, clinical case note review, and tape recordings of sessions. Even with the introduction of the Integration and Sealing Over Scale (ISOS)[8], the measure was not widely used until around a decade later and was not without fault (see results and discussion sections). The findings of these early studies are summarised in appendix 1.2.

Despite methodological flaws, the early research signalled recovery style to be a potentially important clinical variable. Interest in the concept was reignited in the late 1990's with a change in empirical focus and investigation became more centred on the relationship between recovery style and functional outcome. There also emerged a school of thought that individuals may use a mixture of recovery styles[10], that recovery style may change over time[10] and may be susceptible to change with therapy[11], challenging the earlier view that it is a relatively fixed personality trait which endures across the lifespan[1]. The shift in research focus was reflected in a change in research methodology with a move towards more quantitative, hypothesis-testing approaches. It is these later empirical studies that are the focus of this review which aims to provide a scientific critique of the recovery style literature post-1987.

Previous Review

To date, there are no published systematic reviews of recovery style in the literature making this review both timely and valuable.

Aims

This review sought to identify, summarise and critically evaluate articles that have investigated recovery style among individuals with psychosis.

Questions

Specifically, the review sought to answer the following questions:

1. What are the features of studies which have examined recovery style in psychosis?
2. What measures have been used to examine recovery style and what are the psychometric properties (reliability and construct validity) of these?
3. What is the evidence for an association between recovery style and both clinical and functional outcome in psychosis?

Method

Inclusion and Exclusion Criteria

Studies were eligible for ***inclusion*** if they:

i. Included a clearly defined measure of recovery style
ii. Studied participants who had experienced psychosis
iii. Were published from 1988 onwards

Studies were ***excluded*** if they:

i. Were published in a language other than English
ii. Were not published in a peer-reviewed publication e.g. conference abstracts, book chapters, study protocols or theses
iii. Qualitative or single case studies
iv. Did not contain a validated or standardised measure of recovery style
v. Did not involve participants who had experienced psychosis

Search Strategy

A systematic review was conducted by searching computerised databases for relevant articles examining recovery style. All searches spanned the entire time period covered by each database, with pre-1988 studies subsequently excluded. The databases searched were:

- Ovid MEDLINE (1946–August Week 4 2017)
- Embase (1996–Week 36 2017)
- CINAHL (1982–August 2017)
- PsycINFO (1967–August 2017)
- Psychology and Behavioural Sciences Collection (1967–August 2017)
- PsycARTICLES (1967–August 2017)
- Science Direct (2003–August 2017)
- Google Scholar (1966–August 2017).

The computerised search used the keywords or subject terms: [**RECOVERY STYLE**] or [**SEALING OVER**] or [**RSQ**] and (**SCHIZOPHRENIA**] or [**PSYCHOSIS**] or [**PSYCHOTIC**]. Initially the term [**INTEGRATION**] was used however this was removed from the final search strategy as it was found to reduce the specificity of the search. Where possible, the limits 'peer-reviewed journal articles'; 'English language'; and 'adult studies' were placed on the search to refine the scope and ensure quality. Where this was not possible, non-journal articles and non-English articles were excluded by hand. Duplicates were removed and the reference lists of all relevant articles were hand searched to ensure no studies were overlooked. Additional articles were added following consultation with experts. Next, the titles and abstracts of journal articles were reviewed for relevance, with any articles not containing the keywords being discarded. The full text was obtained from articles that were potentially eligible and scrutinised using the above inclusion and exclusion criteria.

Assessment of Risk of Bias

All selected articles were subjected to risk of bias evaluation. A bespoke rating scale (see appendix 1.3) was created based on methods developed for observational studies in epidemiology[12] and the Mixed Methods Appraisal Tool (MMAT)[13]. A purposive sample of six articles were selected to be rated by an independent reviewer for inter-rater reliability. Overall agreement was calculated as 91%. Where differences were identified, these were resolved through discussion. The overall quality of the articles was reasonable, with many studies prone to sampling bias.

Data synthesis

A data extraction pro-forma was created (see appendix 1.4) based on Gumley et al.[14]. When not explicitly reported in an article, mean age and gender ratios were calculated where possible. Means were weighted during calculation to account for differences in group sizes. Where two articles relate to the same study (e.g. follow-up studies), only data from the first article chronologically has been used when describing the data set to avoid duplication of data. Where an article reported data from two independent studies (e.g. Drayton et al.[16]) both sets of data were used and the studies treated as separate. These were counted as one article; two studies.

Where possible, effect sizes for correlational data were reported using correlation coefficients (Pearson's *r*). For the purposes of transparency, effect sizes were standardised using equations provided by Rosenthal et al.[15] found in table 1.

Table 1: Equations for calculating effect sizes

	T scores	F scores (when df=1)	χ^2 (when df=1)	Cohen's d
Equation for calculating *r*	$\sqrt{\frac{t^2}{(t^2+df)}}$	$\sqrt{\frac{F}{(F+df_d)}}$	$\sqrt{\frac{\chi^2}{n}}$	$\frac{\mathrm{d}}{\sqrt{d^2+n}}$

Results

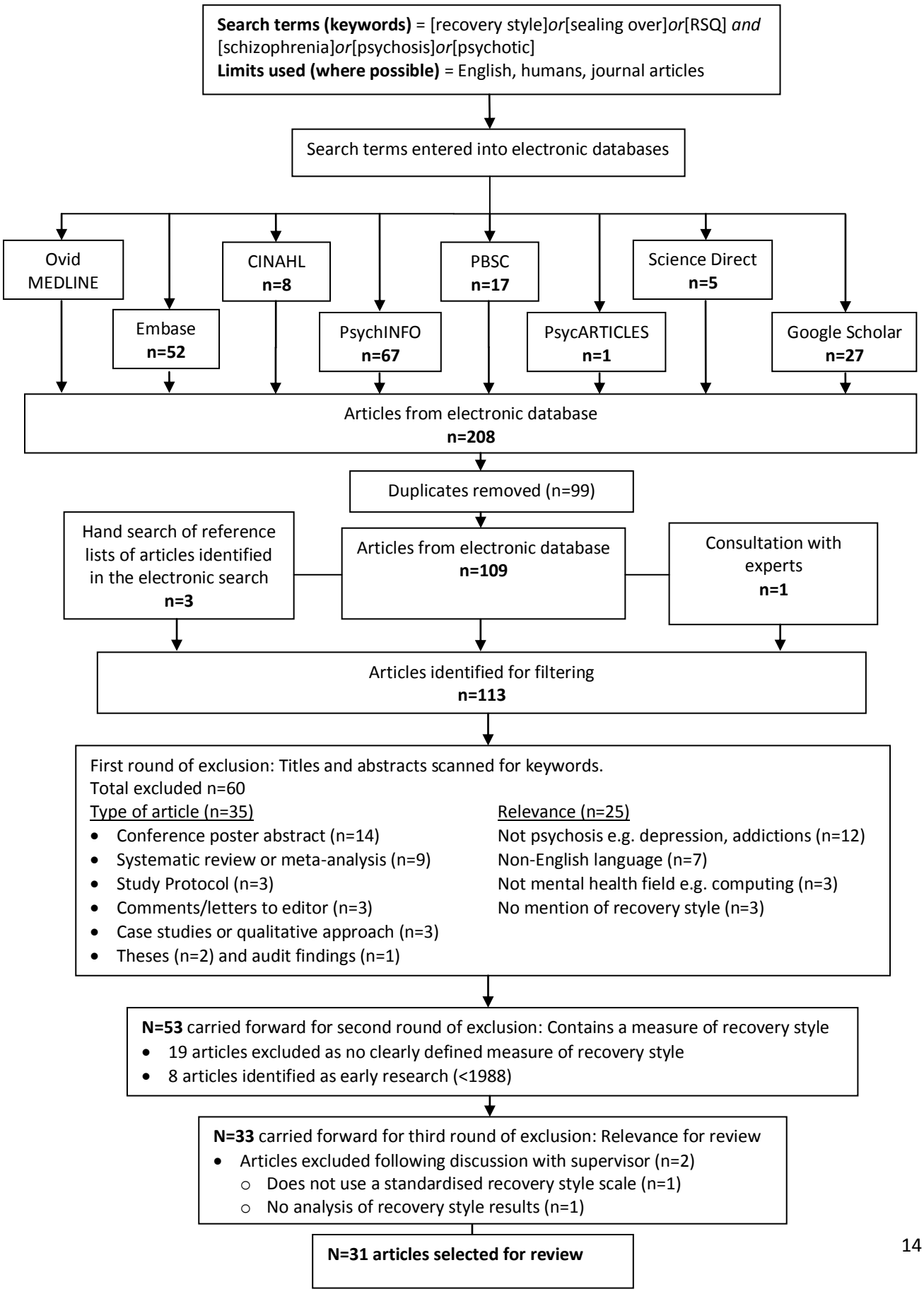
Literature Search

The article search and exclusion process is summarised in Figure 1. A total of 113 articles were identified from the electronic databases, hand searches and consultation with experts (AG), excluding duplicates. 60 articles were removed based on scanning the title and abstract for relevance and article type. Of the remaining 53 articles, 19 were excluded for not containing a clearly defined measure of recovery style and eight articles were identified as early research (<1988).

This resulted in 33 papers meeting the specified inclusion/exclusion criteria for review. These were scrutinised by two reviewers (GF and AG) with particular focus on six articles which showed debatable relevance to the review aims. With consensus between the reviewers, two articles were excluded for not using a standardised recovery style scale or showing no analysis of recovery style results.

Ultimately, 31 articles describing 28 studies were selected for review. One article[16] described two studies, whilst four articles[17,18,19,20] were either follow-up studies or pertained to the same study as an article already selected for review[11,21,22,23].

Figure 1: Article Selection Flowchart



Study and participant characteristics

Characteristics of the 28 studies (31 articles) and their participants are summarised in appendix 1.5. There were a total of 2845 participants in the included studies. The mean sample size was n=97.8, with one study[19,22] accounting for 921 (32.4%) of the total number of participants. Without this study the mean sample size was n=61.1. Gender data were available or calculable for all studies with 67.6% (n=1922) participants male and 32.4% (n=923) female. All samples contained a mixture of men and women with the exception of one study[24] which contained only men (n=44;1.5%).

Based on data from 26 studies (n=2678;94.1%) the mean age of the participants was 36.59 years. 20 studies provided whole sample age data whilst this figure had to be calculated by the researcher in six articles[11,24,25,26,27,28]. Mean age data were unavailable for 167 participants (5.9%) from two studies[29,30].

All studies used a convenience sample and a variety of international recruitment sites were identified. The UK was the most common base for studies with eleven studies[16,20,23,24,26,28,30,31,32,33,34] (n=516;18.1%), four[10,11,17,35,36] were based in Australia (n=348;12.2%), three[25,22,19,37] in Italy (n=1122;39.4%), three[38,39,40] in Switzerland (n=272;9.6%), two[18,21,41] in the USA (n=147;5.2%), two[42,43] in Spain (n=145;5.1%), two[27,29] in Ireland (n=192;6.7%) and one[44] in the Netherlands (n=103;3.6%).

The majority (n=17) of studies recruited from out-patient/community services (n=2240;78.7%) whilst six studies[18,21,27,36,39,40,42] recruited from in-patient services (n=336;11.8%). One study[24] used community *and* in-patient services (n=44;1.5%), one study[20,23] recruited from in-patient and home treatment sites (n=50;1.8%), one[11,17] from a centre offering in-patient, out-patient, day programme and home treatment (n=80;2.8%), and two studies[25,34] recruited from semi-residential services (n=95,3.3%). Many of the services used for recruitment were generic psychiatric services, however seven studies[10,11,17,28,29,31,32,33] recruited from a specialist first-episode or early intervention service (n=564;19.8%) and one study[41] used a specialised service for veterans (n=97;3.4%).

A range of participant diagnoses under the umbrella term 'psychosis' were used in the studies including but not exclusive to schizophrenia, schizo-affective disorder, delusional disorder, schizophreniform, bipolar disorder, and psychosis unspecified. Seven studies[10,11,17,28,29,31,32,33] specified that the sample were first episode (n= 564;19.8%). One study[42] used a sample of people with persecutory delusions (n= 50;1.8%). Two studies[39,40] specified that participants were in the recovery phase from an acute psychotic episode (n= 139;4.9%). One study[27] sampled people with an involuntary admission to hospital (n=68;2.4%) whilst another[35] sampled participants with problematic command hallucinations (n= 43;1.5%).

Measures of recovery style

Two main measures of recovery style were used in the included studies: the Integration and Sealing Over Scale (ISOS)[8] and the Recovery Style Questionnaire (RSQ)[16]. Both are modelled upon McGlashan & Levy's two-factor model of recovery style. 12 articles (10 studies)[10,11,16,17,18,21,25,36,37,38,39,40] (n=884;31.1%) used the ISOS whilst 21 articles (20 studies)[16,19,20,22,23,24,26,27,28,29,30,31,32,33,34,35,37,43,40,42,44] (n=2,140;75.2%) used the RSQ. Of these, three studies[16,37,40] used both the ISOS and the RSQ. (n=276;9.7%). In addition, one study[41] (n=97;3.4%) used the Bell Object Relations and Reality Testing Inventory (BORRTI)[45] as a measure of recovery style.

Integration and Sealing Over Scale (ISOS)

The ISOS is an observer-report measure, based around 13 items derived from previous qualitative research. It requires the interviewer to perform a semi-structured clinical interview to derive a rating of the person's recovery style based on clinical judgement.

Integration and sealing over are located at polar extremes of a 6-point Likert scale with each point representing a different style: 1–Integration; 2–Tends toward integration; 3–Mixed picture in which integration predominates; 4–Mixed picture in which sealing over predominates; 5–Tends toward sealing over; 6–Sealing over.

In the original study[8], a single global rating was produced based upon participant's responses. Two articles[10,16] (n=288;10.1%) report scoring the measure in this way. At least four articles[25,38,39,40] (n=317;11.1%) contradicted this recommendation by evaluating each of the 13 items separately, giving each an individual score on the 6-point scale. In two of these articles[38,40] (n=197;6.9%) scores on the 13 items were summed to give a total score (range 13-78). In three articles[25,39,40] (n=184;6.5%) the average was calculated (range 1-6) indicating the prevailing style (note one article[40] calculates both). Five articles[11,17,18,21,37] (n=286;10.1%) do not describe whether they used a global or summed score.

In four articles[10,25,39,40] (n=380;13.4%) points on the scale are merged to form larger groupings. In one article[25] (n=45;1.6%) points 1,2 and 3 are collapsed to form a single 'integration' group whilst 4,5 and 6 become a 'sealing over' group. In two articles[10,40] (n=260;9.1%) a three-way split is achieved by collapsing points 1 and 2 to form an 'integrative' group, points 3 and 4 to become a 'mixed' group, and points 5 and 6 to form a 'sealing over' group. In one article[39] (n=75;2.6%) a cut-off of <2.5 is used to categorise 'integration', whilst >4.5 indicates 'sealing over'.

Two articles[18,21] (n=50;1.75%) scored the ISOS on a 7-point scale, with 1 corresponding to integration and 7 corresponding to sealing over. No details are provided on how this was achieved.

All articles bar one (n=906;31.8%) used the measure in its entirety, whilst one article[36] (n=29;1.1%) used an adapted version, selecting three of the 13 constructs they felt best represented recovery style, to yield a single score indicating Integration/Sealing Over.

A common critique of the ISOS is that ratings can be influenced by the individual's relatedness to the observer, with judgements confounded by interpersonal dynamics[6]. In order to mitigate this, it was proposed that the chances of bias would potentially be reduced by the use of multiple, independent observers[1]. One article[36] (n=29;1.3%) provided evidence of carrying this out by using two observers and reporting an Intraclass Correlation (ICC)=0.85.

Recovery Style Questionnaire (RSQ)

In contrast to the ISOS, the RSQ is a self-report measure of an individual's own recovery style. Participants are required to agree or disagree with statements about attitudes towards their illness e.g. 'I am curious about my illness'. The scale consists of 39 items, derived from the 13 concepts defined in the ISOS, and developed in collaboration with a focus group of mental health staff and patients.

The scoring of the RSQ is complex. Each item is assigned a score of 0 (sealing over) or 1 (integration). Items are then grouped in threes corresponding to the 13 ISOS subscales. A participant responding with a majority of items (two or three) from each subscale indicating integration would lead to the assignment of an integration score (score=1) on that particular subscale. The total number of integrating scores is expressed as a percentage of the total (e.g. six integrating subscales are assigned a percentage score of 6/13=46%) with higher percentages indicating greater integration. A categorical score can also be derived by mapping the percentages onto a six-point scale corresponding to the ISOS global rating scale, with each point representing approximately 16.67% and *lower* scores indicating integration. For example, a participant scoring 68-83% of the questions with integrating responses would be assigned a score of '2' (tends towards integration) on the global scale[16]. Participants can then be assigned to a dichotomous 'integrating' (score<3) or 'sealing over' (score>3) group.

There is wide variation in the way the RSQ is scored in the included studies and a lack of consistency in the language used to describe the results. For example, the term 'RSQ total score' is often used and variously refers to: (a) a summing of the raw sores (range 0-39); (b) the number of subscales assigned an integration score (0-13); (c) a percentage score calculated using the above scoring system (0-100%); (d) the percentage score mapped onto the six-point scale (0-6); or (e) a mean of the raw item scores (0-1). Furthermore it is not always clear whether a high score indicates integration or sealing over.

One article[43] (n=95;3.3%) uses a range of 0-78 for scoring. Email correspondence with the lead author (LG) revealed a scoring system of '1' for sealing over and '2' for integration rather than the traditional '0' and '1' values used elsewhere, although this ought to yield a range of 39-78.

As with the ISOS, points on the scale are often merged to form larger groupings. Again there is a lack of consistency in how this is achieved. Onearticle[27] (n=68;2.4%) groups participants into three clusters by combining 'integrative' scores 1 or 2, 'mixed' scores 3 or 4 and 'sealing-over' scores 5 or 6. This appears to keep the spacing between the groups equal, with the added statistical advantage of increasing the number in each group. At least four articles[20,23,37,44] (n=309;10.9%) group individuals into four categories: 'integration'; 'mixed-picture in which integration predominates'; 'mixed picture in which sealing-over predominates'; 'sealing over'. Email correspondence with other authors (LG) indicates that this is achieved by combining groups 1/2, and 5/6, whilst leaving 'mixed' groups 3 and 4 intact. If accurate, this means the intervals between the groups becomes unequal, with each end group representing a larger range (33%) than each of the middle groups (16.7%). In two articles[20,23] (n=50;1.8%) the four groups are sometimes combined again into two larger groups during analysis. One study[37] (n=156;5.5%) purports to replicate this scoring, but subsequently reports 'RSQ means' in the range of 7.40-8.55 when the scale maximum ought to be 6. It is feasible that these figures represent number of subscales meeting the criteria as opposed to mapped scores.

Six articles [24,29,30,32,33,42] (n=335;11.8%) do not give detail as to how the RSQ was scored. One study[29] reports 'mean RSQ total' values in the range 22.89–44.02 which appear very low (although not necessarily incorrect) if this represents a percentage calculated with the original scoring guidelines. It is equally unlikely that the scoring has been calculated by summing the raw scores as this would yield a maximum score of 39. It is possible that integration and sealing over values have been switched or perhaps another undefined scoring strategy was used.

Bell Object Relations and Reality Testing Inventory (BORRTI)

The BORRTI is a psychoanalytic self-report instrument based on constructs of ego function. It consists of 90 descriptive true-false statements answered according to the respondent's most recent experience e.g. 'It is hard for me to get close to anyone'. Scoring yields scores on four object relations scales: 1) alienation; 2) insecure attachment 3) egocentricity; 4) social

incompetence; and three reality testing subscales: 1) reality distortion; 2) uncertainty of perception; 3) hallucinations and delusions.

Whilst originally designed to evaluate individuals for personality and thought disorder, it is proposed that distinctive recovery style profiles can be identified through a clustering of results with the two groups 'integration' and 'sealing over' differing in their levels of symptom awareness, social interest and investment, and use contrasting defensive strategies for managing the complexity of interpersonal relatedness[41].

Psychometric properties of the recovery style instruments

Reliability

Seven articles[16,26,34,39,40,42,43] (n=437;15.4%) reported Cronbach's Alpha as a measure of internal consistency, whilst one article[36] (n=29;1.0%) calculated an Intraclass correlation (ICC). For the RSQ, the mean alpha score reported was α=0.68 (range=0.52–0.78; median=0.73) placing it in the 'questionable' (approaching 'acceptable') range[46]; whilst for the ISOS the mean and median score was α=0.895 (range=0.86–0.93) placing it in the 'good' (almost 'excellent') range. ICC ratings for the ISOS were 0.73 (therapist plus one observer) and 0.85 (therapist plus two observers). A table of reliability scores can be found in appendix 1.6 alongside ratings based upon accepted internal consistency ranges.

Construct Validity

No factor analysis examining the underlying structure of the ISOS or the RSQ was reported. Evidence of construct validity for the recovery style measures can be shown through the association with other theoretically related measures. For the purposes of construct validity, the authors[16] analysed the correlation between the RSQ and the ISOS from which it was derived. As expected, the two measures were highly correlated (r=0.92;n=56;p<.001). Only one other study[40] in the review examined the relationship between the RSQ and the ISOS in

terms of construct validity, reporting a significant - albeit smaller - correlation between the two measures (r=0.5;n= 61;p<.001).

The Stages of Recovery Instrument (STORI)[47] is a broader measure of recovery developed on a five-stage model of recovery from psychosis. Common factors examined by the measure including finding hope, taking responsibility, redefining identity and finding meaning demonstrate a degree of conceptual overlap with recovery style. In examining the construct validity of the STORI, one study[43] demonstrated a moderate association between four of the five STORI stages and RSQ total score (mean r=.30;p<.01) and between the five stages and RSQ styles ($\chi^2(4)=15.42$; p=.004).

In the development of the RSQ, the authors identified an over-reporting of integration compared to the ISOS (RSQ 57.14% integration vs. 51.78% using ISOS). This finding was replicated by one study[37] in the review which found 79.2% integration using the RSQ vs. 60.4% of the same population using ISOS. In order to examine whether studies using the RSQ tended to report higher integration levels than studies using the ISOS, distribution of recovery style was extracted or calculated from articles where possible (n=11) (see appendix 1.7). However, the variation in scoring and clustering made any comparison difficult.

Evidence for an association between recovery style and outcome

Recovery style was investigated in relation to a variety of outcomes including symptom levels, engagement with services and attachment. In addition, evidence was gathered regarding whether recovery style changed over time. A total of 80 measures were used in the selected studies, including outcome measures and diagnostic tools (see appendix 1.8). In many studies it proved difficult to delineate which measures were used specifically in relation to recovery style due to an underlying bias in only reporting significant findings. Given the wide array of outcomes measured and the lack of overlap between studies (35 of the measures were used by studies uniquely), it was decided to cluster measures together by the type of variable measured. Clustering was performed with consensus from the review supervisor (AG) as follows:

1. Psychiatric symptomatology including insight (15 measures)
2. Global and social functioning and quality of life (11 measures)
3. Emotional wellbeing e.g. depression, anxiety, PTSD/trauma (16 measures)
4. Engagement with services (including use of services) and therapeutic alliance (7 measures)
5. Psychological factors e.g. beliefs and attitudes, metacognitions, resilience, identity, coping, identity, attachment, self-esteem, stigma, neuropsychological, personality, carer beliefs (31 measures)

Psychiatric symptoms (including insight)

Almost all articles (n=27) (n=2605;91.6%) used a measure of psychiatric symptomatology, although only 15 articles[10,19,22,23,24,25,28,32,34,37,38,39,40,41,44] (n=1915;67.3%) reported findings in relation to recovery style. The most commonly used tool to measure symptoms was the PANSS[48] which was used in 12 articles[19,20,22,23,33,37,38,39,40,41,42,44] (n=1684;59.2%).

Four articles[10,19,22,23] reported an association between recovery style and *total psychiatric symptoms*. Three articles[10,19,22] (two studies) found sealing over patients showed higher levels of general psychopathology (r=0.09) whilst one study[23] found sealing over was associated with an improvement in psychosis scores between 3-6 months (r=0.34). Six articles[23,25,37,39,41,44] found no significant relationship between total symptoms and recovery style. One study[34] found sealers tended to have worse symptoms at baseline, but there was no association with symptom severity at two-year follow-up. With reference to subscales, six articles[10,19,38,39,40,44] reported a significant relationship between *negative symptoms* and recovery style, with sealing over participants showing higher levels of symptoms (r=0.13-0.54). One study[41] found no relationship with negative symptoms. Two articles[38,41] demonstrated a significant relationship between sealing over and *thought disorder/cognitive disorganisation* (r=0.20) and one article[32] found sealing-over was associated with a greater severity of *persecutory delusions* (r=0.50).

Three articles[19,24,44] reported an association between recovery style and *insight,* with sealing over patients showing significantly poorer insight (or integrating patients showing significantly better insight) in each study (r=0.17-0.41). Meanwhile, two articles[23,28] found no relationship between recovery style and insight.

Global and social functioning and quality of life

Twelve articles used a measure of overall functioning or collected specific sociodemographic data used to measure social competence. However only seven articles[10,19,22,34,38,39,40] (n=1439;50.6%) examined this in relation to recovery style. Sealing over was found to be associated with poorer *global functioning* (r=0.46)[38,40] and poorer *psychosocial functioning* (r=0.09)[19,22] whilst integration was found to be associated with better *quality of life* and/or *life skills* (r=0.32)[10,34] and increased *social competence*, as measured by living outwith the parental home (r=0.19-0.29)[10,39].

Emotional wellbeing

18 articles included a measure of emotional wellbeing, with nine articles[16,18,20,21,25,33,40,41,42] (n=427;15.0%) reporting findings in relation to recovery style. In terms of *anxiety*, one study[25] found nervousness was significantly more present in the sealing over group (r=0.44) whilst two studies[33,42] found no relationship between recovery style and anxiety. Regarding *depression*, findings were mixed. One study[25] found significantly more depression in the integration group (r=0.48) whilst two studies[16,42] found significantly lower levels of depression in the integration group (r=0.30–0.57). Three studies[20,33,40] found no significant differences in depression between the two recovery styles. One article[41] found a relationship between integration and greater PANSS '*emotional discomfort*' (r=0.20). One study[42] found recovery style moderated the relationship between internalised stigma and depression. They found participants with a sealing-over style had high levels of depression when they experienced internalised stigma and low levels of depression when stigma was low. However, participants with an integrated style presented similar levels of depression regardless of stigma.

Regarding *PTSD*, results varied depending on the outcome examined. One study[33] found people with a sealing over style had less frequent intrusions about their first episode of psychosis (r=0.29) but were significantly more likely to adopt cognitive strategies to avoid these intrusions (r=0.34), suggesting that coping style may mediate the traumatic impact of a first episode of psychosis. The same study found no difference between the two recovery styles with regard to PTSD diagnosis. One other study[21] found no differences in integration/ sealing over scores between diagnostic groups, this time between PTSD syndrome, PTSD diagnosis and non-PTSD groups. One study[18] found participants with PTSD syndrome tended to have more of an integrative style of coping with psychosis (r=0.41), but participants who met full PTSD criteria did not differ in their recovery style from those with no full PTSD.

Engagement and alliance (including provision and use of services)

15 articles measured service engagement, working alliance and/or service provision, with 11 articles[11,17,23,24,27,29,34,36,37,38,39] (n=809;28.4%) examining this in relation to recovery style. In terms of *service engagement*, one study[23] found that sealing-over at 3-months following an onset of psychosis predicted low service engagement at 6 months (whereas neither insight nor symptoms predicted engagement). The sealing over group showed significantly lower total engagement, availability, collaboration, help-seeking, and treatment adherence (r=0.42–0.58). Two articles[34,37] found no difference in service engagement between recovery style groups.

Regarding *alliance*, one study[36] found sealing over was associated with poorer working alliance, specifically less agreement on tasks and goals of therapy, less engagement, and poorer bonds (r=0.68–0.83). One study[38] found lower *clinician* ratings of therapeutic alliance were significantly linked to a more sealing over recovery style, however they found no relationship between *patient* ratings of alliance and recovery style.

In terms of *treatment uptake*, two articles[11,17] found participants in a therapeutic intervention group showed higher levels of integration than those who refused treatment; both at the end of treatment (Cohen's d=0.71) and at one-year follow-up (d=0.9), but not at

baseline. Similarly, one study[36] found patients who dropped out of treatment were more likely to have a sealing over style than patients who stayed in therapy (r=0.50). Regarding *treatment provision*, one study[39] found integrators more frequently received psychotherapy than sealing over patients (r=0.27), whilst one study[29] found no difference in recovery style between participants who were referred/not referred for CBT, attended/did not attend, or adhered/did not adhere to treatment. One study[27] found individuals with a sealing over style were at four times the risk of *involuntary readmission* than individuals with an integrative style, whilst another study[24] found no relationship between recovery style and service provision (secure vs. community services). One further study[37] found no difference between the recovery style groups in the annual cost per patient suggesting similar levels of service use.

Psychological factors

A number of psychological processes were examined in relation to recovery style, with 21 articles using this type of measure. Nine articles[10,16,20,27,28,30,34,40,41] (n=671;23.6%) examined *beliefs, attitudes or metacognitions*. Sealing over was found to be associated with more negative self-evaluations (r=0.33–0.52)[16,20], insecure identity[20], stronger positive beliefs about worry (r=0.43)[30], and greater beliefs that life events are under external control (r=0.33)[40], whilst an integrative style was found to be associated with greater perceptions of both illness coherence (r=0.35) and treatment effectiveness (r=0.36)[34], and higher uncertainty of perception[41]. One study[10] found a correlation between patients' 'Explanatory Model' (their understanding and beliefs about their illness) and their recovery style at stabilisation (r=0.71) and at 12 month follow up (r=0.70). Three studies report finding no significant differences between the recovery style groups in terms of perception of previous involuntary admission[27], illness perception[34] and negative illness appraisals[28].

Four articles[16,20,26,39] (n=234;8.2%) examined recovery style in relation to *attachment experiences*. Using the Parental Bonding Instrument (PBI)[49], two studies[16,20] found recovery style was associated with negative early childhood experiences. In both studies, participants

in the sealing over group perceived both their mother (r=0.37–0.49) and their father (r=0.49–0.71) to be significantly less caring than those in the integration group. In the second study[20] the sealing over group also perceived both their mothers (r=0.41) and fathers (r=0.57) as more abusive, but found no significant differences in maternal or paternal protection. Meanwhile two studies[26,39] found no relationship between recovery style and recollections of poor bonding using the PBI. Regarding adult attachment style, one study[26] found an association between sealing over and the 'relationships as secondary to achievement' subscale of the Attachment Style Questionnaire (ASQ)[50] (r=0.34) whilst another[20] found sealing over was associated with insecure adult attachment with lower levels of comfort with closeness (r=0.39), greater dependence in relationships (r=0.49), and more anxiety about interpersonal rejection (r=0.47).

The included studies also found an integrating recovery style was associated with less internalised stigma (r=0.32-0.46)[42], better executive functioning (r=0.15–0.32)[41], higher neuroticism (r=0.40)[41], and increased odds of remission at 1-year follow-up (independent of symptom levels, insight, or therapeutic alliance)[44]. Sealing over was associated with higher personality lie-scale ratings (r=0.37)[41], and a greater degree of distress (about depression and anxiety) in health workers[25].

Evidence for recovery style changing over time

Seven articles[10,11,17,23,31,34,35] (n=456;16.0%) presented longitudinal data which was used to assess the stability of recovery style over time. One study[34] examining the relationship between recovery style, illness perceptions and outcome found a significant change in recovery style toward integration between initial measurement and two-year follow-up (r=0.41). The 19 participants who dropped out of the study did not differ significantly on recovery style from those who were followed up, indicating that the change in recovery style was not simply a by-product of participant withdrawal. Similarly, one study[11,17] found a significant reduction in ISOS score (towards integration) in a therapeutic intervention group, compared to those who refused treatment (r=0.33) and a control group (r=0.46). These differences were observable at the end of treatment[11] and at one year follow up (r=0.41 for

the refusal group)[17] but not at baseline, indicating a therapy effect. Meanwhile, one study[23] found recovery style scores increased over time *towards sealing over*, mostly within the first three months (r=0.45). No other studies measured recovery style at this time point in therapy. One study[10] found that 44.4% of patients changed their recovery style at 12 month follow-up, suggesting it is not a stable trait. Whilst most change in this study tended towards integration, change towards sealing over also took place, suggesting that movement along the spectrum may be part of a wider process.

One study[31] examining the effects of written emotional exposure on psychosis-related PTSD found recovery style *did not change* significantly over time in either the experimental or control group, although both groups showed a (non-significant) decrease in scores (towards integration) between baseline and follow-up. However the primary aim of the therapy was not to effect change in recovery style. One further study[35] found no significant difference in recovery style between 'intervention' vs. 'befriending' groups at either endpoint or follow-up. Although they did not examine changes in recovery style over time per se, the figures presented show no difference in recovery style from baseline, through endpoint and follow-up for either group.

Discussion

The purpose of the review was to summarise and evaluate articles investigating the relationship between recovery style and outcome in psychosis. Specifically, to examine tools used to measure recovery style and the association between recovery style and outcomes. We identified 31 articles describing 28 studies comprising a total of 2845 participants with a mean age of 36.6 years.

Measures of Recovery Style

Two main measures of recovery style were used in the included studies: the clinician-rated ISOS used in 10 studies; and the self-report RSQ used in 20 studies. Only three studies used both the ISOS and RSQ making the data available for direct comparisons between the measures limited. In addition, one study used the BORRTI as a measure of recovery style.

The review highlighted a lack of clarity on scoring in many of the articles, particularly those which use the RSQ. Where studies did report a scoring system, it was often not detailed enough to be replicable or comparable to others. In some studies (e.g. Fanning et al[29]) there was uncertainty whether higher scores indicate integration or sealing over, making it difficult to draw clear conclusions on the results. Where scoring *was* adequately outlined, there was wide variation in the systems used, with at least six ways of scoring the measure described. This has implications for the validity and reliability of the measure as alternative methods of scoring remain untested and unvalidated. In addition, there was a lack of consistency in the language used to describe the results. Often the term 'RSQ total score' was used in reporting findings without explicitly stating what this actually reflects, making interpretation of results difficult and comparison of studies tricky.

There was also variation in the way ISOS and RSQ scores were treated, with some handling the six-point mapped score as a continuous variable, with group means calculated and standard deviations reported; and others treating it as categorical in nature. There was little discussion aside from one article[10] regarding the appropriateness of this, despite implications for the suitability of statistical methods chosen for analysis.

Another factor complicating the comparison of studies was sampling. Whilst most studies recruited participants from similar populations, there was variation in which participants were then analysed. Most studies used the ISOS or RSQ to stratify the whole sample into 'integrating' or 'sealing over' groups based on a midpoint cut-off of the mapped score (<3=integrating; >3=sealing over). This meant that each group contained a spectrum of participants e.g. from unequivocal integration to a mixed picture. However some articles excluded 'mixed' participants from the study[41] or from analysis[39,40], using only polar extreme

participants. Thus the 'integration' group in one study may not be comparable with an 'integration' group in another.

Regarding the psychometric properties of the measures, fewer than a quarter of the selected studies reported evidence of reliability or construct validity and none carried out factor analyses to examine the underlying structure of the RSQ or the relationship between the items. Despite only achieving a mean reliability score in the 'questionable' range, claims are made in the literature that the RSQ has "*excellent psychometric properties... consistently demonstrated in a number of studies"* (Jackson et al.[33]; pg.329). Furthermore, the evidence that articles offered in support of reliability and validity is sometimes circular. Jackson et al.[33] reference Drayton et al.[16] and Shawyer et al.[23] as evidence of the RSQ's "*excellent psychometric properties*". However Shawyer et al.[23] offers no psychometric analysis of its own to substantiate this claim, simply referencing the same Drayton article as evidence. The excellent psychometric properties of the measure seem to have become an accepted truth with little supporting evidence.

Regarding construct validity, two articles[16,40] demonstrated a significant correlation between the ISOS and the RSQ, indicating that these measures likely assess the same construct. However there remains a distinct lack of evidence of an association with other measures of recovery, or any related constructs, as highlighted by Cavelti et al.[51] in their review of self-report recovery instruments. One article[43] demonstrated a moderate level of convergence between the RSQ and the STORI, a broader measure of recovery developed on a five-stage model, although this measure is based upon a different conceptualisation of recovery.

Outcomes

Recovery style was investigated in relation to a wide variety of outcomes, as reflected in the number of unique tools used in the included studies. This resulted in fairly mixed evidence for a relationship between recovery style and outcome. In terms of psychiatric symptomatology, sealing over was generally related to higher levels of negative symptoms and thought disorder, with a wide range of effect sizes reported. However the evidence for a relationship between recovery style and positive symptoms or total psychopathology was

less convincing, with some studies demonstrating a significant relationship and others finding none. Furthermore, effect sizes were generally small, partly due to the influence of a very large n (>900) in one study[19,22]. The findings regarding the relationship between recovery style and insight demonstrated that although integration was associated with greater insight (as expected; integrating patients are insightful by definition), the two are not synonymous and insight is still possible with both recovery styles. The evidence for a relationship with global functioning was more robust - although effect sizes were wide ranging - with signals to suggest sealing over was associated with decreased levels of functioning in a number of domains: global functioning, psychosocial functioning, social competence and quality of life. Conversely, there was no consistent picture found regarding a relationship between emotional wellbeing and recovery style, irrespective of anxiety, depression or PTSD diagnosis. The evidence regarding service engagement, treatment alliance, and service provision and use was also mixed, with some studies demonstrating a relationship with recovery style and others showing none. In studies where a relationship *was* found, effect sizes tended to be high, suggesting a strong relationship. A variety of associations were shown with psychological factors, with reasonable signals and large effect sizes regarding a relationship between recovery style and attachment experiences and beliefs.

A number of theories were offered to explain the relationships (or lack thereof) demonstrated in the studies and it is important to remember that the methods used means the direction of causality is not established. It may be that integration of experiences is a sophisticated and mentally demanding process and factors such as thought disorder and negative symptoms may interfere with an individual's ability to complete the necessary tasks involved, resulting in a tendency towards sealing over. Denial and minimisation – key factors in sealing over – alongside a lack of insight and awareness, may result in the presence or impact of symptoms being downplayed, which may lead to reduced scores on self-report outcome measures compared with integrators. Mixed findings such as those found with emotional wellbeing are perhaps unsurprising in the context of contradictory hypotheses regarding the vulnerability to depression of both integrators and sealers respectively. Whilst many theorise that sealing over may leave people more vulnerable to depression, others predict that accepting responsibility for psychotic experiences may result in difficulties with

self-esteem, shame, guilt, confusion and self-doubt, thus *increasing* vulnerability to depression. The mixed evidence regarding service engagement, provision and use is more surprising in light of the tendency for integrators to be curious and sealers' use of minimisation and denial. This perhaps serves as a reminder that recovery style exists in a systemic context with multiple influences at play, including how services and clinicians respond to sealers.

The capacity for recovery style to change over time was difficult to demonstrate empirically as most studies were cross-sectional. Nevertheless, five articles provided evidence that recovery style may not be a stable trait, thus challenging the original idea that it is fixed and endures across the lifespan. It may be that the samples included in the review provided greater scope for change than the chronic in-patient samples used in the early studies which informed the original conceptualisation of recovery style. The trend in most studies was generally a shift towards integration, although one article[23] found recovery style scores increased over time towards sealing over, mostly within the first three months. Differences had evened out by six months, suggesting perhaps a role for denial and sealing over as a protective factor in the early stages of therapy. It may be that individuals vary their recovery style depending on the stage and course of their illness, as with insight[52].

Of the two articles[31,35] which showed no demonstrable evidence for a change in recovery style, it is important to note that this was not the primary aim of either study. In addition, one article[31] comprised a higher percentage of integrating participants (87%) than other research with similar samples, perhaps affecting their capacity for change, particularly given the trend for change is typically towards integration.

Strengths and limitations of studies reviewed

The studies included a mix of individuals with psychosis, at various stages of illness, recruited from a variety of sites and settings across the world. The heterogeneity of the samples potentially increases the relevance of the findings overall. Sample sizes were reasonable with a mean n=97.8 (n=61.1 excluding one outlier) and there was good consistency of recovery style measurement with two main measures used.

Limitations of the studies have been highlighted throughout the review, particularly the lack of consistency and transparency in scoring the recovery style measures, making comparisons difficult. Samples need to be considered when interpreting and generalising the results, particularly studies which excluded 'mixed' recovery style participants either from recruitment or analysis. The majority of studies were cross-sectional in nature, making any inferences regarding the direction of causality difficult. In addition, handling and reporting of data were not consistent and there was a tendency in studies to only report significant findings, meaning effect sizes may be overestimated.

Both the RSQ and ISOS are based upon the same two-factor model of recovery style, which appears to have been widely accepted in the literature without a great deal of critique. Whilst this has led to consistency in terms of the tools used to measure recovery style, the fact that only two measures exist - both reflecting the same conceptualisation of recovery style - is both a strength and a limitation of the body of research.

Limitations of current review

Firstly, the focus on English language articles may have resulted in relevant evidence being overlooked. Secondly, although the rating scale developed for this review was useful in providing a specific assessment of risk of bias, a broader assessment of methodological quality may also have been valuable. In addition, the bespoke nature of the tool means it lacked established validity. Whilst efforts were made to include as many findings as possible, reporting of all outcomes was outwith the scope of the review. Any bias in articles of only reporting significant findings may have translated to a bias in the review. Furthermore, the large number of outcome measures used in the review meant studies had to be pooled together, which may have affected how the results were interpreted.

Information required to answer the review questions was not always reported in the included studies. This was partly because the review's aims were not always consistent with those of the studies, particularly in studies measurement of recovery style was a secondary measure. There was substantial variability in research questions and outcomes measures in

the included studies, resulting in a lack of theoretical coherence and making systematic review difficult. Effect sizes could not always be calculated and data was not amenable to meta-analysis.

Research implications

The primary issue highlighted is the need for consistency in scoring the recovery style measures, particularly the RSQ. The number of different scoring methods used made it difficult to examine the true impact of scoring on the results, but it is possible that scoring partly explains the variation in outcome. Uniformity in scoring would certainly make future studies more comparable. In addition, more evidence regarding the validity and reliability of the measures - including an exploratory factor analysis of the RSQ - would be a useful contribution to the literature. Evidence of association with other measures of recovery, or any conceptually similar constructs, would bolster the construct validity of the measures.

Although not directly addressed in this review, there is a wider issue of whether the measures are still fit for purpose. Both measures rely heavily on the concept of 'mental illness' and as this evolves, there is perhaps a need for new recovery style measures to reflect this. It is also questionable whether a simple yes/no self-response questionnaire can capture the full complexity and nuance of recovery style. For instance, in assessing an individual's recovery style, it is critical to understand whether they disagree they have a medical illness because they deny any difficulties, or because they reject a medical formulation of their experiences. A semi-structured interview may provide a better opportunity to tease apart such views.

Any new tool development may also offer an opportunity to re-examine the construct of recovery style itself. A comprehensive critique of the widely accepted two-factor model is much needed, including whether sealing over and integration are actually opposing poles of a uni-dimensional construct[34] and whether they account for common strategies individuals employ in their recovery. Any re-conceptualisation might also take into account the evidence supporting the fluidity of recovery style as this appears to challenge the original

understanding. Longer-term follow-up studies examining recovery style over time are needed to explore this further.

Clinical implications

On the whole, integrators tended to have better functioning and outcome than sealers, perhaps because their recovery style places them at a clinical advantage of being more open to discussing their experiences and understanding the risk factors that contribute to an exacerbation of their symptoms[4]. Coupled with the finding that recovery style may not be a stable trait as initially thought, but may be open to change over time or with therapy, it may seem reasonable to encourage individuals to become more integrative, with a well-intentioned view to improving outcome. However it is vital to remember that good outcomes are possible with both recovery styles and there is no 'right' way to recover. We must consider the function that sealing over serves. If we conceptualise recovery style as being adaptive, with sealing over functioning as a psychological defence against overwhelming threats to the self e.g. shame and guilt, then denial may be a powerful tool in an otherwise limited toolbox. There is a risk that greater integration may lead to increased self-awareness, shame, stigma and depression, at least temporarily.

Although it is still not fully understood how, when or why an individual may change their recovery style, change seems consistent with the idea that recovery style is functional and an individual might therefore adapt their style depending on their individual circumstances. It may be more appropriate to use the knowledge of an individual's recovery style to inform therapy, offering interventions tailored to complement the style adopted, rather than to pathologize individuals. This may be challenging in light of the finding that service users who seal over demonstrate poorer working alliance and engagement in treatment with mental health services. Features of sealing over such as lack of curiosity, denial, poor internal resources and difficulty establishing or sustaining relationships are not good indicators for therapy. Greater efforts are required to engage this population – if and when appropriate - and explore their attitudes to treatment and understanding of symptoms. It is also important

to contextualise recovery style, formulating how it exists within the individual's interpersonal network and consider how others in the system (e.g. services) respond.

Conclusions

Two main measures of recovery style exist: The ISOS and the RSQ. The quality of the psychometric properties of these tools appears to be overinflated in the literature, particularly for the RSQ. The review highlights a lack of consistency and transparency in scoring the measures and handling data, making findings difficult to interpret and compare. Nevertheless, recovery style has emerged as a clinically important variable and provides a useful framework for understanding how people cope with living with the experience of mental illness. Evidence suggests it may be more important than insight, symptom levels, and therapeutic alliance in predicting the course of illness and odds of remission. However the wide variety of outcomes examined in the literature with relation to recovery style means the research lacks a consistent direction. Outcome results are mixed, but this finding is contextualised by wide variability in the aims of studies, tools used, and scoring systems employed, which perhaps partly explain the variation in outcome. A more focussed and cohesive research field with greater consistency of measurement may provide opportunity for a greater evidence base to be established. Additional evidence of the psychometric properties of the recovery style tools would also be a welcome addition to the field.

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CHAPTER 2

MAJOR RESEARCH PROJECT

Validating the Narrative Recovery Style Scale (NRSS) in a sample of individuals with serious mental illness

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October 2018

Chapter Word Count: 7801 words (including tables, figures, references)

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Submitted in partial fulfilment of the degree of Doctorate in Clinical Psychology (D.Clin.Psy.)
Prepared according to submission guidelines for Schizophrenia Bulletin (Appendix 2.1)

Plain English Summary

Title: Validating the Narrative Recovery Style Scale (NRSS) in a sample of individuals with serious mental illness.

Background: Recovery style describes the attitudes people hold and the way in which they adjust to having mental health difficulties. It was originally thought that people reacted in one of two ways; either by 'integration' or 'sealing over'. Integration involves recognising the impact of mental health experiences, accepting them, and wanting to understand them better; whereas sealing over involves minimising or denying the experience, preferring not to dwell on the past. Recently researchers have criticised this model as being too simplistic and suggested a third way in which people might respond called 'ruminative preoccupation'. This involves feeling lost, stuck or scared, and having difficulty in controlling emotions when thinking or talking about their experiences. The same researchers created a new way of measuring people's recovery style called the Narrative Recovery Style Scale (NRSS). Their initial results were promising and it looked like the NRSS could be a useful way of measuring recovery style in the future. This is important because a person's recovery style can affect their recovery and even their chances of remission.

Research questions: We wanted to examine whether the NRSS is a good way of measuring recovery style. By this we mean: does it test what it sets out to test? We did this by comparing the NRSS to an existing recovery style questionnaire and other questionnaires measuring similar concepts such as attachment and coping.

Methods: We recruited people with schizophrenia, bipolar disorder or who had experienced lots of trauma from community mental health services in Glasgow. Everyone filled out some questionnaires and completed an interview about compassion, which we recorded. Later, we listened back to the interviews and transcribed them word for word. Then we rated each interview, giving each one a score out of nine for integration, sealing over and rumination. We scored the other questionnaires then compared all the results to look for any relationship between the measures.

Findings: Contrary to our expectations, we found that the NRSS did not relate to any of the other questionnaires. This may be because the NRSS does not measure recovery style as well as we thought, or there may be other reasons for our findings. The interview we used (about compassion) did not require people to talk about their mental health which made it hard to use as a basis for rating recovery style. In addition our sample was quite small and perhaps didn't represent the wider population as well as it could.

Conclusions: Although the results were not significant, we were able to learn some lessons to guide future research into recovery style. We recommend developing a new interview that asks people specifically about their mental health experiences so the NRSS can be used more accurately and with greater certainty. Further development of the NRSS including a way to categorise people according to their dominant recovery style may also be helpful.

Abstract

Background: A critique of the traditional two-factor model of recovery style suggests that it does not fully take into account the range of strategies people use in their recovery. A third style of 'ruminative preoccupation' is proposed in addition to the existing styles of 'integration' and 'sealing over'. In addition, current tools used to measure recovery style lack construct validity and have limitations such as being outdated or using a simplistic format. The Narrative Recovery Style Scale (NRSS) is a novel method of evaluating recovery style, using interview transcripts to provide a three-dimensional measurement of an individual's style.

Aim: The primary aim of this study was to validate and examine the psychometric properties of the NRSS in a mixed clinical sample of individuals with serious mental illness.

Method: 36 participants with either schizophrenia (n=13), bipolar disorder (n=9), or complex trauma (n=14) were recruited to the study from community mental health services in Glasgow. Participants were interviewed using the Narrative Interview for Compassion-Revised (NCS-R), a recorded semi-structured interview designed to measure participants' experiences of compassion towards the self, from self to others and from others to self. This was transcribed and the NRSS was applied to the narrative in order to obtain recovery style ratings. We examined the relationship between the NRSS and the Recovery Style Questionnaire (RSQ), the Coping Inventory for Stressful Situations (CISS) and the Psychosis Attachment Measure (PAM).

Results: No associations were found between the NRSS subscales and the RSQ, the CISS, or the PAM. Regarding the internal structure of the scale, the integration subscale was found to be negatively correlated with the sealing over subscale. No relationship was found between the other subscales. Regarding the characteristics of the sample, a number of significant differences between the diagnostic groups were noted including age, IQ, occupation, attachment avoidance, coping, and RSQ recovery style.

Conclusions: Although the results do not support the validity of the NRSS as a three-dimensional measure of recovery style, there are various methodological factors which may have influenced the study results. We recommend the development of a specifically constructed interview designed to activate recovery style, upon which the NRSS can be more reliably applied. A re-examination of the NRSS scoring strategy may also increase the research utility and strengthen the reliability of the measure.

Introduction

Recovery style provides a potentially useful framework for understanding how people cope with living with the experience of mental illness. Evidence suggests that the attitudes that people hold towards their illness and how they adjust psychologically to the experience of having an illness may be more important than insight, symptom levels, and therapeutic alliance in predicting the course of illness and odds of remission[1,2]. According to the original model proposed by McGlashan, Levy and Carpenter[3] individuals tend towards one of two distinct styles of recovery, existing at opposite ends of a spectrum: 'integration' and 'sealing over'. An integrative recovery style is characterised by the individual acknowledging the effect their illness has had on their life and accepting responsibility for their psychotic experiences. They may be able to identify both pleasure and pain associated with their illness and are curious to explore and understand their experiences. A sealing over style is characterised by minimisation and denial, with psychotic experiences viewed as isolated events with little significance. The individual is disinclined to explore their illness for any source of meaning or information and prefers not to dwell on the past. In general the experience is viewed in entirely negative terms.

Currently two main measures of recovery style exist: The Integration and Sealing Over Scale (ISOS)[4] and the Recovery Style Questionnaire (RSQ)[5]. Both are modelled upon the two-factor model of recovery style described above. The ISOS is an observer-report measure, based around 13 items derived from previous qualitative research. It requires the interviewer to perform a semi-structured interview to derive a rating of the person's recovery style based on clinical judgement. The ISOS has excellent reported reliability scores ranging from 0.86–0.93 but is open to observer bias[6]. In contrast, the RSQ is a self-report measure of an individual's own recovery style in which participants are required to agree or disagree with statements about attitudes towards their illness. The scale consists of 39 items, derived from the 13 concepts defined in the ISOS and developed in collaboration with a focus group of mental health staff and patients. Reported RSQ reliability scores range from a more moderate 0.52–0.78. Scoring of the measure is complex and is inconsistent across studies, with various methods reported (see Chapter 1: Systematic Review).

Both measures are grounded within a somewhat medical understanding of psychosis, operating on the assumption that that the individual interprets their experiences as being the result of "mental illness". Whilst statements such as "I have had a nervous breakdown" may have accurately reflected the original conceptualisation of integration, they appear outdated in the context of a more modern, psychological approach to psychosis and recovery. The language used raises the question of whether the original construct and measurement of recovery style retain validity in the current day or whether it is time for a new conceptualisation. In addition the yes/no format of the RSQ provides no opportunity to explore whether disagreement with statements such as the above indicates true sealing over or merely a rejection of the medical model.

A limitation of both measures is the lack of evidence of construct validity, as recognised by Cavelti and colleagues[7] in their review of recovery instruments. To date, no factor analysis examining the underlying structure of the ISOS or the RSQ exists. Two studies[5,8] demonstrated a significant correlation between the two measures, indicating that they likely assess the same construct. However, this stands to reason considering that the RSQ was developed as a self-report version of the ISOS, formulated using the same 13 underlying constructs. One other study[9] demonstrated a high level of convergence between the RSQ and the STORI, a broader measure of recovery developed on a five-stage model of recovery from psychosis. However, there remains a distinct lack of evidence of an association with other measures of recovery or related constructs.

Evidence regarding a relationship between recovery style and outcome is generally mixed, partly due to the range of methodologies used and the wide variety of outcomes examined in the literature. The most consistent findings demonstrate a significant relationship between sealing over and increased negative symptoms[10], poorer insight[11], decreased levels of global and social functioning[12], poorer quality of life[1], and more insecure attachment[13,14]. However as a whole, the research field lacks focus with wide variability in study aims and outcomes measured, compounded by a lack of consistency in how recovery style measures are applied.

Towards a new model and measure

McGlashan and colleagues' recovery style model has been widely accepted in the literature and has been used as the foundation for all research in the field. However a recent study (MacBeth et al., unpublished manuscript) identified a limitation of this model in accounting for common strategies that individuals employ in their recovery from psychosis; namely strategies based around worrying, preoccupation and rumination. MacBeth and colleagues applied attachment theory[15] to the conceptualisation of recovery style and highlighted a conceptual overlap between the constructs of i) integration and secure attachment organisation and ii) sealing over and insecure avoidant attachment. They proposed that strategies such as worrying, preoccupation and rumination may have developed from an insecure preoccupied style of attachment, which McGlashan's model fails to recognise. Accordingly, they proposed a third style of recovery: 'Ruminative Preoccupation', characterised by an inability to control the emotional aspect of the dialogue, leading to preoccupation and fear and a sense that the person is lost or preoccupied by his or her own experiences and memories.

Macbeth and colleagues developed a novel measure of recovery style called the Narrative Recovery Style Scale (NRSS; Gumley & MacBeth, unpublished manuscript) designed to provide a three-way measurement of recovery style. Designed to be applied to any relevant transcript, the NRSS provides a framework which allows coding and analysis of narrative structure and content. Scores are yielded on a 9-point scale for three subscales: Integration, Sealing Over and Ruminative Preoccupation. The higher the score on each of these subscales, the greater the tendency of the narrative towards each style of recovery.

The application of the NRSS to a transcript means there is potential for someone independent of the interview process to rate the narrative, thus removing potential sources of bias from the rating. In addition, the existence of a narrative provides a context for the reviewer to make judgements, thus reducing ambiguity and making it easier to clarify what is really meant. Furthermore, the language used in the NRSS scoring manual reduces the dependency on medical terminology, using the term 'experience' rather than 'illness', and

focusing more on the attributes of curiosity, openness, understanding of experiences, engagement with positive and negative aspects of experience, awareness of continuity of experience and making links with current problems in order to achieve a highly integrating score.

Using a mixed clinical sample of 43 individuals with diagnoses of psychotic disorder and borderline personality disorder, Macbeth et al. found that sealing over was negatively associated with integration (r=-.453) and ruminative preoccupation (r=-.454). Clinically, they found that higher levels of integration were associated with fewer positive (r=-.340) and negative (r=-.347) symptoms, sealing over was associated with more negative symptoms (r=.310), and that ruminative preoccupation was associated with higher global symptom severity (r=.380), higher distress (r=.341), and higher attachment anxiety (r=.423) and avoidance (r=.526). Their findings broadly support a three-way measurement of recovery style, however more research is needed in this area to validate the NRSS. In particular, in terms of construct validity, the authors did not explore associations between the NRSS and any other measures of recovery.

Aims and hypotheses

The primary aim of this study was to validate and examine the psychometric properties of the NRSS in a mixed clinical sample of individuals with serious mental illness (bipolar disorder, psychosis and complex trauma). This measure was developed to provide a three-way measurement of recovery style as opposed to the traditional two-factor model. Psychological measures are validated by testing whether they relate to measures of other constructs as specified by theory[16]. In the current study, this was achieved by examining associations between the NRSS and self-report measures of recovery style, coping style, and adult attachment. The study also aimed to describe patterns of recovery style across the sample. It was hypothesised that:

1. The NRSS 'integration' subscale would be associated with higher RSQ integration, higher CISS task-oriented coping, and lower PAM attachment anxiety and avoidance.
2. The NRSS 'sealing over' subscale would be associated with higher RSQ sealing over, higher CISS avoidance-oriented coping, and higher PAM attachment avoidance.
3. The NRSS 'ruminative' subscale would be associated with higher CISS emotion-oriented coping, and higher PAM attachment anxiety.

Method

Participants

36 participants were recruited to the study from community mental health services in NHS Greater Glasgow and Clyde (NHSGG&C). Some participants volunteered through the charity Bipolar Scotland and were then recruited in collaboration with their NHSGG&C clinicians. All individuals met ICD-10 criteria for either schizophrenia-spectrum disorders (n=13; 10 men), bipolar disorder (n=9; 3 men) or had experienced complex trauma (n=14; 5 men). Diagnoses

were confirmed by a psychiatrist in the clinical team and by case note review. The main diagnoses of those in the schizophrenia spectrum disorder group were schizophrenia, schizoaffective disorder, delusional disorder and psychotic disorder. Complex trauma was defined as exposure to "severe stressors that (i) are repetitive or prolonged (ii) involve harm or abandonment by caregivers or other ostensibly responsible adults, and (iii) occur at developmentally vulnerable times in the victim's life such as early childhood or adolescence"[17]. Exclusion criteria were the presence of substance dependence, neurological disorder, intellectual disability or autism-spectrum disorders. Individuals who lacked capacity to consent, whose severity of symptoms impaired their ability to participate, or were not proficient in English language were also not included. One participant (female; complex trauma group) dropped out of the study without completing full data giving the study a 97.2% completion rate. Some other measures were not fully completed thus reducing the total n for some comparisons.

Procedure

All participants were recruited in collaboration with their clinicians and their GPs were informed by letter of their participation. They were given a study information sheet (appendix 2.2) and discussed participation with the researcher before providing written informed consent (appendix 2.3). Participants were assessed individually by one of three researchers - all trainee clinical psychologists (GF,ER,ET) - over one or two sessions (participant's choice) lasting around 2-2.5 hours in total. Participants were offered refreshments and at least one 15 minute break during testing. Participants were offered telephone follow-up approximately one-week following their participation to discuss any issues which may have arisen from taking part. Each of the researchers collected data on one diagnostic group at mental health centres in Glasgow between 2013 and 2015.

Ethical Approval

Ethical approval was granted by the NHSGG&C Research Ethics Committee on 22/02/13 (reference: 13/WS/0014; appendix 2.4) and followed by management approval from NHSGG&C Research and Development Directorate on 15/03/13 (appendix 2.5).

Measures

Demographic information including age, gender, occupation and level of education was collected from participants and case notes were examined to verify diagnosis, duration of illness and medication. The following measures were administered:

Recovery Style Questionnaire (RSQ)[5]

A self-report questionnaire measuring recovery style. Participants are required to agree or disagree with 39 statements about attitudes towards their illness. Scoring can be calculated as a raw score out of 39 (with high scores reflecting integration), as a percentage (with high scores reflecting integration), or by mapping onto a six-point scale (with high scores reflecting sealing over). We grouped participants according to recovery style as follows: integrative score (1-3); sealing over score (4-6). The RSQ has been validated against the ISOS from which it was developed and has been shown to have reasonable reliability[1]. For the current study reliability was calculated as 'acceptable' (α=.70) as defined by Nunnaly[18].

Coping Inventory for Stressful Situations (CISS)[19]

A 48-item self-report scale for measuring the dimensions of Task, Emotion, and Avoidance-Oriented coping. There are two subscales for the Avoidance-Oriented scale: Distraction and Social Diversion. The CISS has international norms and good psychometric properties[20]. In the current study reliability was calculated as 'good' (α=.88).

Psychosis Attachment Measure (PAM)[21]

A 16-item self-rating measure assessing attachment avoidance and anxiety. The measure shows good levels of reliability and good to acceptable test-retest reliability[22]. Subscale scores were obtained by summing the eight avoidance and anxiety scores respectively. In the current study reliability was calculated as 'questionable' (α=.67) when testing the measure in its entirety, increasing to 'acceptable' (α=.78 and α=.75) when examining the avoidance and anxiety subscales independently.

Hospital Anxiety and Depression Scale (HADS)[23]

A 14-item self-report measure of anxiety and depression. It has been shown to have good reliability and validity in a variety of different populations[24]. In the current study we calculated reliability as 'good' (α=.86). Subscale scores of 8-10 were used to identify mild cases, 11-15 moderate cases, and 16+ severe cases, as per the authors' original recommendation.

Altman Self-Report Mania Scale (ASRM)[25]

A five-item self-report scale to assess the level of mania and hypomania symptoms in patients diagnosed with bipolar disorder. The ASRM is brief, well validated and has very good test-retest reliability[26]; although in the current study we calculated reliability as 'poor' (α=.55).

Narrative Interview for Compassion-Revised (NCS-R; Gumley, Toal, Rhodes, Fraser & McLeod, unpublished manuscript; appendix 2.6).

A recorded semi-structured interview designed to measure participants' experiences of compassion towards the self, from self to others and from others to self. The first part of the interview focuses on developing a shared understanding of compassion by exploring the meaning of 12 words related to compassion. The participant then selects three or four words they feel best describe compassion for them. Next, participants are asked to recall three scenarios in which 1) they were compassionate to others 2) others were compassionate

towards them and 3) they were compassionate towards themselves. Prompts are provided to encourage full exploration of compassionate experiences and tap into the participant's state of mind with regards to the recalled memory. The interview was transcribed verbatim and scored using:

Narrative Recovery Style Scale (NRSS; Gumley & MacBeth, unpublished manuscript); appendix 2.7).

A framework which allows coding and analysis of narrative structure and content. The NRSS yields scores on a 9-point scale for three subscales: Integration, Sealing Over and Ruminative Preoccupation. The higher the score on each of these subscales, the greater the tendency of the narrative towards each style of recovery.

In addition to the instruments above, the study collected supplementary data as part of a joint project with two other trainees, entitled '*Compassion, memory and coping: A study identifying change processes underpinning recovery'.* Broader objectives of the study included examining the relationship between adult attachment patterns, complex trauma and compassion, and evaluating a novel measure of autobiographical memory and mentalization. A list of the additional measures administered can be found in appendix 2.8.

Data Analyses

A within-subjects cross-sectional design was used. Data were analysed using SPSS version 24. The demographic and clinical characteristics of participants were described as a whole and by diagnostic group. Shapiro-Wilk tests were conducted where possible to test continuous variables for normality and as a result non-parametric tests were selected for analysis. Differences between groups were tested using Kruskal-Wallis tests for continuous variables, and Fisher's exact test for categorical variables. Where a significant Kruskal-Wallis result was found, post-hoc tests were carried out using Mann-Whitney U-test. Given the pilot nature of the study, Bonferroni corrections were not applied in order to avoid making any Type II errors. Cronbach's alpha was calculated as a measure of scale reliability and relationships

between variables were examined using Spearman's Rho correlations and Kruskal-Wallis tests.

Sample size

In the previous study by MacBeth et al. (n= 43), correlations of the NRSS of a magnitude between 0.31-0.55 were observed. Sensitivity analysis carried out using G*Power adopting a conventional significance level of alpha=.05 and an effect size of 0.4 estimated that a sample size of n=66 would be required to produce a power of 0.8 to detect statistical significance, and n=36 to produce power of 0.5.

Results

Sample Characteristics

The socio-demographic and clinical characteristics of the participants are presented in Table 1, highlighting a number of statistically significant differences between the diagnostic groups. There was a significant difference in age between the groups ($H(2)=9.08;p=.011$) with the psychosis group significantly older than both the bipolar ($U=18.5;Z=-2.67;p=.006$) and trauma ($U=41.0;Z=-2.43;p=.014$) groups. There was an apparent difference in gender between the groups with the psychosis group containing more men than the other groups, however this was not statistically significant ($p=.060$).

WTAR Full Scale IQ differed significantly ($H(2)=13.34;p=.001$) and was significantly higher in the bipolar group than the psychosis ($U=10.0;Z=-3.25;p=.001$) and trauma ($U=12.0;Z=-3.22;p=.001$) groups. There was no significant difference in level of education ($p=.387$). Occupation differed significantly ($p<.001$) with a greater percentage of the psychosis and trauma groups classified as unemployed.

Regarding attachment, there was no significant difference in attachment anxiety between the groups ($H(2)=0.35;p=.838$) however there was a significant difference in attachment avoidance ($H(2)=6.82;p=.033$) with the trauma group showing significantly greater attachment avoidance than both the psychosis group ($U=50.0;Z=-2.00;p=.046$) and the bipolar group ($U=26.0;Z=-2.35;p=.019$).

There was no significant difference in Total CISS coping between the groups ($H(2)=5.26;p=.072$) despite the psychosis group appearing to use more coping strategies than the others. The only CISS subscale to differ was distraction techniques ($H(2)=6.58;p=.037$), with the psychosis group using this type of coping strategy significantly more than the trauma group ($U=28.0;Z=-2.47;p=.014$).

Significant differences were noted in recovery style between the groups ($H(2)=16.37;p<.001$). The bipolar group showed greater integration than both the psychosis ($U=9.5;Z=-3.28;p<.001$) and trauma ($U=4.5;Z=-3.62;p<.001$) groups as measured by RSQ total score and RSQ subscales ($p=.002$). The groups showed no significant differences in levels of self-reported depression ($H(2)=1.32;p=.516$), anxiety ($H(2)=3.06;p=.217$) or mania ($H(2)=1.48;p=.478$).

Table 1: Sample Characteristics

		Psychosis (n=13)	Bipolar (n=9)	Trauma (n=14)	Total (n=36)
Gender, n(%)	Male	10	3	5	18(50)
	Female	3	6	9	18(50)
Age in years, median(IQR)*		55.0(18.5)	40.0(13.0)	46.5(18.0)	47.0(6.5)
Education, n(%)	Primary	5	0	3	8(22.2)
	Secondary	2	2	2	6(16.7)
	College	4	3	5	12(33.3)
	University	1	4	2	7(19.4)
	Don't know	1	0	2	3(8.3)
Occupation, n(%)**	Employed	0	6	1	7(19.4)
	Unemployed	13	1	11	25(69.4)
	Student	0	1	2	3(8.3)
	Retired	0	1	0	1(2.8)
WTAR FSIQ, median(IRQ)**		93.0(14.5)	110.0(10.5)	92.0(21.5)	98.0(17.5)
PAM totals, median(IQR)*	Attachment avoidance	14.0(6.0)	12.0(6.0)	17.0(6.75)	15.0(7.5)
	Attachment anxiety	11.0(6.5)	11.0(6.0)	10.0(10.75)	10.5(5.75)
HADS totals, median(IQR)	Depression	8.0(5.0)	6.0(6.0)	9.0(7.25)	8.0(6.75)
	Anxiety	12.0(6.0)	11.0(8.5)	14.5(5.25)	13.0(5.0)
AMS total, median(IQR)		3.0(4.0)	5.0(5.0)	4.5(6.0)	4.5(3.75)
CISS total, median(IQR)		172(35.75)	147.0(22.5)	145.5(47.0)	150.0(38.0)
CISS subscales median(IQR)	Task	53.5(20.75)	52.0(9.0)	43.0(19.75)	51.0(15.0)
	Emotional	38.5(16.75)	53.0(21.5)	62.0(24.25)	57.0(21.5)
	Avoidance	46.5(23.75)	46.0(9.0)	44.0(19.0)	45.0(12.5)
	Distraction*	27.0(11.75)	20.0(10.5)	20.5(7.5)	22.0(10.0)
	Social Diversion	15.0(10.0)	19.0(9.0)	14.0(10.5)	15.0(9.0)
RSQ total, median(IQR)**		25.0(5.0)	32.0(4.0)	24.0(6.0)	27.0(8.0)
RSQ subscales, n (%)*	Sealing over	0	0	0	0(0)
	Tends towards SO	0	0	0	0(0)
	Mixed picture SO	1	0	0	1(2.9)
	Mixed picture INT	7	0	7	14(40.0)
	Tends towards INT	3	3	6	12(34.3)
	Integration	2	6	0	8(22.9)

*result significant at <.05 level

**result significant at <.001 level

Properties of the NRSS

Distribution

Using Shapiro-Wilk as a test of normality, we found the integration subscale was normally distributed (W=.941;p=.059) whilst the sealing over and rumination subscales were not normally distributed (W=.928;p=.025; and W=.919;p=.014 respectively).

Descriptive scores for the NRSS for the sample as a whole and for the three diagnostic groups are presented in table 2. Kruskal-Wallis tests revealed no significant differences between the diagnostic groups on each of the three subscales, despite an apparent tendency towards integration in the bipolar sample. Median scores showed a tendency towards integration in the sample as whole, and in the bipolar group in particular.

Table 2: NRSS Subscale Scores

NRSS Subscale		Whole sample	Psychosis	Bipolar	Trauma	Between group analysis
Integration	mean(SD)	4.26(2.05)	3.85(2.54)	5.44(1.68)	3.85(1.68)	H(2)=4.96; p=.082
	med(IQR)	5(3-6)	5(1-5)	6(5-6)	3(3-5)	
Sealing over	mean(SD)	4.00(2.26)	4.77(2.95)	3.11(1.54)	3.85(1.73)	H(2)=2.15; p=.349
	med(IQR)	3(2-5)	5(3-7)	3(2-5)	4(3-5)	
Rumination	mean(SD)	3.74(2.21)	3.92(1.98)	4.22(2.11)	3.23(2.56)	H(2)=1.78; p=.419
	med(IQR)	3(2-5)	4(2-5)	3(1-4)	3(3-7)	

Subscale correlation

Regarding the internal structure of the scale, the integration subscale was found to be negatively correlated with the sealing over subscale (r_s=-.826;p<.001). No relationship was found between the ruminative subscale and either of the other subscales.

Regarding demographics, there was no relationship between NRSS subscale score and age, gender, education, occupation, depression, or anxiety. A significant correlation was found between the integration subscale and FSIQ (r_s=.443;p=.008) with higher integration related

to higher IQ. A significant correlation was also found between the sealing over subscale and self-reported mania (r_s=-.408;p=.015) with higher sealing over associated with lower mania.

Construct Validity

We examined the relationship between the NRSS and another measure of recovery style (RSQ) and other theoretically related measures (CISS and PAM). No associations were found between the NRSS subscales and any of the other measures. The Spearman Rho correlation results are presented in table 3.

Table 3: NRSS Correlations

	NRSS integration subscale	NRSS sealing over subscale	NRSS rumination subscale
RSQ total	r_s=.295; p=.091	r_s=-.160; p=.367	r_s=-.040; p=.821
PAM avoidance	r_s=-.002; p=.992	r_s=-.012; p=.946	r_s=-.081; p=.646
PAM anxiety	r_s=-.032; p=.845	r_s=-.014; p=.938	r_s=.050; p=.777
CISS total	r_s=-.064; p=.739	r_s=.084; p=.661	r_s=.153; p=.419
CISS task-oriented	r_s=-.193; p=.275	r_s=.257; p=.143	r_s=.155; p=.382
CISS avoidant	r_s=-.149; p=.415	r_s=-.087; p=.637	r_s=.255; p=.160
CISS emotion-oriented	r_s=.095; p=.606	r_s=.016; p=.930	r_s=-.079; p=.665

Post-hoc analyses

The lack of a significant relationship between the NRSS and any of the related measures warranted further investigation. We therefore decided to examine the relationship between the other measure of recovery style (RSQ) and the two dependent measures: PAM and CISS. This investigation was exploratory in nature and no real hypotheses were made. Regarding coping, the only significant relationship was found between total RSQ score and CISS social diversion (r_s=.442;p=.008), indicating higher integration is associated with increased use of social diversion strategies. With regards to attachment, a significant correlation was found between total RSQ score and attachment avoidance (r_s=-.429;p=.010) indicating higher integration is associated with less attachment avoidance. This finding is broadly in keeping

with other finding regarding a relationship between sealing over and more insecure attachment[13,14].

We also decided to explore differences between the diagnostic groups further by comparing interview length. Mean interview times are presented in table 4. There was a significant difference between the groups ($F(2,32)=16.69;p<.001$) with trauma group interviews (mean=54 mins) lasting almost double that of psychosis interviews (mean=28 mins). Length of interview did not correlate with NRSS recovery style or RSQ total score ($r=.036;p=.840$).

Table 4: Mean interview length

	Interview length (seconds) mean (SD)
Whole Sample	2553.74(1010.63)
Psychosis	1650.69(419.82)
Bipolar	2849.33(706.40)
Trauma	3252.15(952.65)

Discussion

This study aimed to validate and examine the psychometric properties of the NRSS by examining associations with self-report measures of recovery style, coping style, and adult attachment. The results demonstrate no relationship between the NRSS and any of the other measures. The following discussion will therefore focus on methodological factors which may have influenced the results, limitations of the study and implications for future research.

Use of compassion interview

A potential weakness of the study is the use of the compassion interview (NCS-R) as a source of material for recovery style ratings. The NCS-R provides an opportunity for participants to talk about their experiences of compassion; however it does not explicitly demand participants talk about their mental health, although many choose to. In instances where individuals chose not to discuss mental health experiences, it was difficult to establish whether participants were truly avoiding these issues (indicative of sealing over) or these experiences simply hadn't been elicited. This was a common theme highlighted throughout the researcher coding journal (see extract in appendix 2.9). In addition, the relatively low median scores observed on all subscales suggest that the transcripts were perhaps not rich enough to enable high ratings of recovery style. An alternative measure such as the Indiana Psychiatric Illness Interview (IPII)[28] may provide a better opportunity to explore recovery style in more depth. Better yet, a specifically constructed, semi-structured interview designed to tap into experiences of mental health - perhaps based upon the 13 ISOS concepts of recovery style – may provide optimal opportunity to elicit responses upon which the NRSS can be reliably applied.

Sample homogeneity/ sampling bias

Categorical classification of recovery style using the RSQ revealed n=35 (97.2%) of the sample fell into the integrating category, whilst only n=1 was classified as sealing over. Such a disproportionately high percentage of integrating participants is not in line with the majority of other recovery style study samples, in which the distribution is typically around 50-80% integration[5,29], indicating that the current sample may be unrepresentative. A possible implication of this may be that the sample provided insufficient variation to correlate recovery style with the other measures. Only one other study in the literature[30] reports a similar distribution - albeit still not as extreme - with an 87% integrating sample. The authors suggest that the tasks involved in their study such as writing an essay about a traumatic experience may have been off-putting for those with a sealing over style. Similarly, it may be that in the current study, tasks such as a tape-recorded interview about experiences of

compassion may not have attracted individuals with a sealing over style. Future research may wish to consider ways in which to increase study appeal for people with a sealing-over style, although this type of work may always be prone to such difficulty.

Sample heterogenity

Regarding diagnosis, no between-group analyses were planned aside from exploring sample characteristics. We opted to treat the sample as a mixed group of participants with mental health difficulties on a continuum rather than separate diagnostic entities, based on evidence recognising the limitations of using a diagnostic framework[31]. This was justified from a theoretical perspective as we did not conceptualise there being any major differences between the groups. Indeed, a degree of overlap was expected in light of the evidence for an association between trauma and psychosis[32]; a hypothesis which appeared to be substantiated by the number of trauma participants who were prescribed anti-psychotic medication in the current study. Treating the sample as a mixed group was also a practical decision as the study was not powered enough to make between-group comparisons. However, it may have been naive. Three studies[29,33,34] found significant differences in recovery style between diagnostic groups, with a tendency for those with schizophrenia or schizoaffective disorder to tend towards sealing over, and those with affective disorder to tend towards integration. This finding was replicated in the current study with the bipolar group showing higher levels of RSQ integration than the other two groups, notwithstanding the overall tendency towards integration in the sample as a whole.

In addition, excerpts from the researcher coding journal illustrate qualitative differences between the diagnostic groups in their interviews. For example, many trauma participants chose to speak about addiction rather than mental illness, where treatment often follows a different model for recovery with greater use of externalising strategies[35]; a concept which seems analogous to integration. Meanwhile, aspects of thought disorder (specific to psychosis) were highlighted as being difficult to differentiate from aspects of ruminative preoccupation, making this subscale tricky to score. Such observations suggest that treating the sample as a diagnostic whole may have masked important between-group differences in recovery style, potentially reducing the association with outcomes of interest. Indeed,

McGlashan[34] found that recovery style correlated with outcome to varying degrees depending on diagnosis, with the weakest associations found in the schizophrenic spectrum.

Any relationship between recovery style and diagnosis is likely to be complex. Despite small numbers in each group, a number of demographic and clinical differences were observed between the diagnostic groups, including age, occupation, IQ, attachment avoidance and coping; all of which may moderate or mediate both the relationship between recovery style and diagnosis, and between recovery style and outcome. Age in particular was reported in one study[29] to show a relationship with recovery style, with participants over the age of 45 more likely to integrate the experience of illness within their life. A number of other variables which were not measured may also have influenced an individual's recovery style, for example duration of illness or history of treatment. It is also plausible that other unmeasured factors such as insight and stigma - widely recognised to be pervasive in psychosis[36] - may play a mediating or moderating role in the relationship with outcome. Future studies may wish to consider that recovery style may not be independent of nosological classification and may look to either reduce the heterogeneity of the sample, or statistically control any potentially confounding factors which may influence outcome.

NRSS scoring

The NRSS provides a measurement on a three-dimensional scale, with each individual receiving a score (out of nine) on each of the recovery style subscales. It does not provide a categorical classification of recovery style; in essence, everyone is 'mixed'. Although this may accurately reflect the literature in terms of the fluidity of recovery style and the potential for individuals to use more than one style[33], there are drawbacks of this scoring strategy.

Firstly, it is difficult to examine the characteristics associated with each recovery style when participants cannot be classified. In theory, the highest score could be taken as an indication of an individual's predominant style, but it is questionable how useful such a crude classification would be. Development of cut-offs or an algorithm to identify the predominant style may provide a more practical way of assigning group membership.

Secondly, there are implications for the way the data can be treated. Without groups, only mean or median scores can be compared and given that the range of each scale is relatively small (1-9) there is only so much potential for significant differences to be observed. Currently each score is derived from an observer giving a single rating based on evaluation of multiple factors. Development of multiple items within each subscale could provide many benefits. Firstly, items added together could provide a single subscale score with a greater range than a single rating (e.g. 4 items in each subscale could yield a score out of 36 for each dimension). Not only would this provide greater scope for variability, it might also make ratings less subjective. It may also provide the added advantage of making the scale amenable to reliability evaluation.

Coping

The CISS was selected as a potential correlate for the NRSS based on the ostensible conceptual overlap of its three-way classification of coping style and the NRSS subscales. Despite possessing established reliability, the scale was poorly completed in the current study with several participants (n=5;14%) missing out items or confusing consecutive lines, casting doubt on the validity of subsequent answers. As a consequence, we were unable to compute total and subscale scores for all participants and questions were raised about the reliability of the tool in this study. In future studies, clinician administration of the scale may reduce the potential for error, or perhaps a different measure of coping style may be more reliable. Then again, it may simply be that the constructs of coping and recovery style truly are unrelated. In pursuit of establishing the construct validity of the NRSS, future research may wish to focus on exploring its relationship with constructs which already have a previously established relationship with recovery style e.g. insight, global functioning, or service engagement.

Recovery style

The lack of relationship between the NRSS and the RSQ is particularly noteworthy given the principle aim of the study was to provide empirical support for the NRSS as a valid measure

of recovery style. However despite the lack of correlation, there are still indications that the two instruments may be measuring a similar phenomenon. Firstly, the results identified a correlation between the integration and sealing over subscales of the NRSS, indicating that it is sensitive enough to identify that greater integration is associated with lower levels of sealing over, similar to the RSQ. Secondly, despite the introduction of a third recovery style which inevitably changed the distribution of recovery style, the NRSS was still able to recognise a similar tendency towards integration in the sample as identified by the RSQ. This raises the possibility that the two instruments are still somehow related, leading to the question that if they are not measuring the same construct, what then are they measuring?

The RSQ is a two-factor self-report measure of recovery style whilst the NRSS aims to measure recovery style on three dimensions *as it unfolds in a conversation*. Indeed it is the aim of the NRSS to measure something different from the RSQ, which was shown in chapter one to be flawed. The lack of correlation - although initially disappointing - is perhaps not as significant as initially thought. Perhaps the findings also speak to a wider issue in conducting this type of work; namely in capturing and quantifying the conceptual complexities of recovery style. The realities of how different recovery styles unfold in discussion are complex and knowledge of these processes versus how they are self-reported is still a work in progress. It may be that recovery style is a construct which requires activating in order to be measured, similar to the coding of secure/insecure attachment style relying on the activation of attachment in the Adult Attachment Interview (AAI; Main et al., unpublished manuscript). Future research may wish to explore this further, perhaps using this idea to aid the development of a bespoke interview constructed to activate or elicit a recovery style discourse.

Limitations

Notwithstanding those already identified, other methodological limitations to be borne in mind include:

Researcher bias 1: lack of independence

One of the strengths of the NRSS is that it can be applied to a transcript, meaning that there is potential for someone independent of the interview process to rate the narrative, thus removing a potential source of bias. In the current study, interviews of the psychosis and trauma groups were carried out independently from the ratings, however logistics meant that the same researcher carried out both the interviews and the ratings for the bipolar group, thus potentially introducing a source of bias. In addition, the researcher rated all the transcripts alone with no measure of inter-rater reliability. This is particularly relevant given the subjective nature of the ratings.

Researcher bias 2: difference in style

Each diagnostic group was recruited by a different researcher, which may have introduced a potential bias. Post-hoc tests showed significant differences between the groups in the length of interview with considerably shorter psychosis interviews. Length of interview did not correlate with NRSS recovery style or RSQ total score (see appendix 2.10). Differences were also noted in interview style e.g. number of follow up questions asked, making it difficult to ascertain whether avoidance of a topic was indicative of true sealing over or was down to the interviewer not following up. Whilst these differences may in part have been down to diagnostic differences in the groups being recruited, differences in interview style may also have influenced participants' responses.

Sample size

Lastly, the study's modest sample size (n=36) may have played a role in limiting the significance of some of the results, yielding only 0.5 power to detect an effect sizes found by MacBeth et al. (0.31-0.55). Power analysis revealed that a sample size of n=66 would be required to obtain statistical power at the recommended 0.8 level.

Conclusions and future directions

In this mixed sample of individuals with serious mental illness, the NRSS does not prove itself to be a valid measure of recovery style and cannot yet offer support for a three-way conceptualisation of recovery style as opposed to the traditional two-factor model. However caution must be exercised in interpreting the findings and various explanations for the results have been offered. The NRSS requires refinement and further testing in order to enhance its utility and validity, but it still has the potential to be a useful addition to recovery style research and may offer clinical benefit. Knowing more about recovery style and how it unfolds in conversation may help us explore an individual's capacity to benefit from different treatment approaches. It is unclear whether interventions aimed at encouraging patients to become more integrative may be of clinical benefit since recovery style is thought to be adaptive and good outcomes are possible with each style. Nevertheless, greater understanding may help us in tailoring interventions to suit a person's style. Future research may wish to consider development of a bespoke recovery style interview to provide material for the NRSS to be applied, tweaking the scoring system to allow for classifications, focusing on experiences of psychosis, and examining constructs with an already established relationship with recovery style.

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Appendix 1.1: Author Guidelines for Submission to Schizophrenia Bulletin

Retrieved 15th March 2018

Information for Authors

MANUSCRIPT PREPARATION

All manuscripts are submitted and reviewed via the journal's web-based manuscript submission system accessible at http://mc.manuscriptcentral.com/szbltn . New authors should create an account prior to submitting a manuscript for consideration.

Manuscripts submitted to *Schizophrenia Bulletin* should be prepared following the *American Medical Association Manual of Style,* 10th edition. The manuscript text (including tables) should be prepared using a word processing program and saved as an .rtf or .doc file. Other file formats will not be accepted. Figures must be saved as individual .tif files and should be numbered consecutively (i.e., Figure 1.tif, Figure 2.tif, etc.). The text must be double-spaced throughout and should consist of the sections described below.

Title Page

This page should consist of (i) the complete title of the manuscript, (ii) a running title not to exceed 50 characters including spaces, (iii) the full name of each author and the authors' institutional affiliations, (iv) name, complete address, telephone, fax, and e-mail address of the corresponding author, and (v) separate word counts of the abstract and text body. Please note that there can only be one corresponding author, per journal style

Manuscript Length

Manuscripts should be concisely worded and should not exceed 5,000 words for major reviews, 4,000 words for regular articles, or 2,500 words for invited special features. The word count should include the abstract, text body, figure legends, and acknowledgments and must appear together with the abstract word count on the title page of the manuscript. Supplementary data, including additional methods, results, tables, or figures will be published online.

Abstract

Provide a summary of no more than 250 words describing why and how the study, analysis, or review was done, a summary of the essential results, and what the authors have concluded from the data. The abstract should not contain unexplained abbreviations. Up to six key words that do not appear as part of the title should be provided at the end of the abstract.

Main Text

Unsolicited original manuscripts reporting novel experimental findings should be comprised of these sections, in this order: Abstract, Introduction, Methods, Results, Discussion, Acknowledgments, References, and Figure Legends. Review articles must contain an abstract; however, the body of the

text can be organized in a less structured format. Authors of review articles are encouraged to use section headers to improve the readability of their manuscript.

Number pages consecutively beginning with the title page. Spelling should conform to that used in *Merriam-Webster's Collegiate Dictionary,* eleventh edition. Clinical laboratory data may be expressed in conventional rather than Système International (SI) units.

Acknowledgments

These should be as brief as possible but include the names of sources of logistical support.

References

Authors are encouraged to be circumspect in compiling the reference section of their manuscripts. Please note: references to other articles appearing in the same issue of the journal must be cited fully in the reference list.

Each reference should be cited in consecutive numerical order using superscript arabic numerals, and reference style should follow the recommendations in the *American Medical Association Manual of Style,* 10th edition, with one exception: in the reference list, the name of all authors should be given unless there are more than 6, in which case the names of the first 3 authors are used, followed by "et al."

- Book: Talairach J, Tournoux P. *Co-planar stereotaxic atlas of the human brain.* New York, NY: Thieme Medical Publishers; 1998.
- Book chapter: Goldberg TE, David A, Gold JM. Neurocognitive deficits in schizophrenia. In: Hirsch SR, Weinberger DR, eds. *Schizophrenia.* Oxford, England: Blackwell Science; 2003:168-184.
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- Journal article with more than 6 authors: Egan MF, Straub RE, Goldberg TE, et al. Variation in GRM3 affects cognition, prefrontal gluatamate, and risk for schizophrenia.*Proc Natl Acad Sci USA* 2004;101:12604-12609.
- Article published on Advance Access only: Gilad, Y. and Lancet, D. March 5, 2003. Population Differences in the Human Functional Olfactory Repertoire. *Mol Biol Evol*doi:10.1093/molbev/msg013.
- Article first published on Advance Access: Gilad, Y. and Lancet, D. 2003. Population Differences in the Human Functional Olfactory Repertoire *Mol Biol Evol* 2003;20:307-314. First published on March 5, 2003, doi:10.1093/molbev/msg013.

Journal names should be abbreviated in accordance with *Index Medicus* (www.nlm.nih.gov/tsd/serials/lji.html).

Manuscripts in which the references do not follow this format will be returned for retyping. References to meeting abstracts, material not yet accepted for publication, or personal communications are not acceptable as listed references and instead should be listed parenthetically

in the text. It is the authors' responsibility for obtaining the necessary permissions from colleagues to include their work as a personal communication.

Figures and Tables

Full length manuscripts including regular and invited theme articles should contain no more than a combined total of 5 tables and figures. Theme introductions and special features are limited to 2 tables or figures (total). Figures and tables must be referred to using arabic numbers in order of their appearance in the text (e.g., Figure 1, Figure 2, Table 1, Table 2, etc.).

Tables should be created with the table function of a word processing program; spreadsheets are not acceptable. Include only essential data, and format the table in a manner in which it should appear in the text. Each table must fit on a single manuscript page and have a short title that is self-explanatory without reference to the text. Footnotes can be used to explain any symbols or abbreviations appearing in the table. Do not duplicate data in tables and figures.

Each figure should have a separate legend that clearly identifies all symbols and abbreviations used. The legend should be concise and self-explanatory and should contain enough information to be understood without reference to the text.

Note: All tables and figures reproduced from a previously published manuscript must cite the original source (in the figure legend or table footnote) and be accompanied by a letter of permission from the publisher of record or the copyright owner.

Supplementary Material

Supporting material that is not essential for inclusion in the full text of the manuscript, but would nevertheless benefit the reader, can be made available by the publisher as online-only content, linked to the online manuscript. The material should not be essential to understanding the conclusions of the paper, but should contain data that is additional or complementary and directly relevant to the article content. Such information might include more detailed methods, extended data sets/data analysis, or additional figures (including color). It is standard practice for appendices to be made available online-only as supplementary material. All text and figures must be provided in separate files from the manuscript files labelled as supplementary material in suitable electronic formats (instructions for the preparation of supplementary material can be viewed here).

All material to be considered as supplementary material must be submitted at the same time as the main manuscript for peer review. It cannot be altered or replaced after the paper has been accepted for publication. Please indicate clearly the material intended as supplementary material upon submission. Also ensure that the supplementary material is referred to in the main manuscript where necessary.

Appendix 1.2 Early research articles (<1988)

Table 1: Early recovery style research

McGlashan, Levy & Carpenter (1975)	Observations of 30 sz patients. Introduces idea of integration and sealing over and discusses these with relation to Mayer-Gross modes of reacting to psychosis. Delineates the two styles of recovery with characteristics described for each one.
Levy (1975)	Descriptive papers characterising the recovery process from psychosis in ego-psychological terms, with reference to integration and sealing over.
McGlashan, Docherty & Siris (1976)	Two case studies to further delineate and characterise the two distinct recovery styles.
McGlashan, Wadeson, Carpenter & Levy (1977)	First paper to use the ISOS as a means of identifying recovery style. Examines relationship between art and recovery style. Found that integrators used more colour, drew with greater detail, were globally more expressive and depicted more motion than sealers. Concludes that art is a medium through which differences in coping with psychosis can be discriminated.
McGlashan & Levy (1977)	Descriptive paper examining how the concepts of integration and sealing over can be useful in understanding and describing interpersonal and group behaviour in an IPU.
McGlashan & Carpenter (1981)	Investigation of whether attitude (not strictly recovery style) towards psychosis relates to outcome. Found that the less negative patients were about their illness and future, the better their outcome. However a very positive attitude was not associated with good outcome, therefore absence of a negative attitude is critical. No relationship found between integration/isolation of experience and outcome suggesting that psychological coping style may be unconscious and independent from a conscious attitude and opinion about illness and the future.
D'Angelo & Wolowitz (1986)	Focused on differences in the defensive organisations of the two recovery styles. Found that integrators possess a less primitive constellation of defence organisations (less dominated by denial, negation and repression).
McGlashan (1987)	Examined relationship between recovery style and long-term outcome (15 years) across a range of diagnostic groups. Global outcome was measured by a single 5-point rating on overall functioning over the entire 15 year period. Found that integration was associated with better outcome across all diagnostic groups. Good outcomes were possible for each group. Suggests that recovery style is a personality style which is relatively fixed across long periods of a person's life.

Article Quality Assessment

Study Component	Methodological Quality Criteria	Responses				
		Yes	No	N/A	Unclear	Comments
Screening questions	Are there clear research questions and hypotheses?					
	Do the data collected allow the research question(s) to be adequately addressed?					
	Is examination of recovery style a primary aim of the study?					
Sampling	1.1 Is the sampling strategy relevant to address the research question?					
	1.2 Are participants recruited in a way that minimizes selection bias?					
	1.3 Is the sample representative of the population under study?					
	1.4 Is the sample size determined by power calculation?					
	1.5 Are the demographic characteristics of participants adequately described?					
	1.6 Are the clinical characteristics of participants adequately described?					
	1.7 Are inclusion/exclusion criteria clearly stated?					
	1.8 Is there an acceptable response rate? (>60%)					
Methods	2.1 Are measurements appropriate? (Standardised, reliability and validity known, used in a standardised way by someone with adequate training)					
	2.2 Is the recovery style measure carried out independently from other measures?					
	2.3 Is the scoring of the recovery style measure appropriate? (Adequate scoring information provided, scored according to the original instructions, a measure of IRR provided)					
	2.4 Is the study procedure described in enough detail to be replicable?					
Analysis	3.1 Are participants in comparison groups comparable or are between group differences controlled for?					
	3.2 Are there complete outcome data (80% or above) and an acceptable follow-up rate for cohort studies?					
	3.3 Were the analyses planned and appropriate to the design and type of measure?					
	3.4 Were any additional analyses justified and appropriate?					
	3.5 Is any explanation given for the handling of missing data?					
	3.6 Are results reported clearly and effect sizes provided?					
Discussion	4.1 Are the conclusions drawn in accordance with the data?					
	4.2 Are the findings provided in context with previous research and theory?					
	4.3 Is there a critique of the methodology?					
	4.4 Are the clinical implications of the study specified?					

Data Extraction Sheet

Study	Sample				Recovery style measure used	Constructs and scoring of measure	Key outcome measures	Results
	n	Age mean (SD)	Gender split m/f	Diagnoses				
								•
								•
								•
								•
								•
								•
								•
								•
								•
								•

Table 2: Participant and Study Characteristics

Study	Sample				Study characteristics				
	n	Age mean (SD)	Gender split m/f	Diagnoses	Setting	Design	Recovery style measure	Primary outcome measure(s)	Other measures (inc. diagnostic)
1 Bell & Zito (2005)	97 (from 222)	44.3	93/4 (96/4)%	Schizophrenia or schizoaffective disorder	Psychiatry service of a Veterans Affairs Medical Center (USA) (convenience)	Cross-sectional. 97 identified as SO/IG selected from 222 participants.	BORRTI (Primary)	WCST	SCID-III-R, PANSS, EPQ, neuropsych instruments (no details)
2 Bernard et al. (2006)	23	24.73 (6.17)	14/9 (61/39%)	First episode of psychosis	Community-based, early intervention, psychosis assertive outreach service in inner city UK (Birmingham)	RCT (emotional disclosure or control writing conditions).	RSQ (secondary)	IES-R	IS, HADS, PANAS, essay evaluation scale
3 Callegari et al. (2016)	45	50.92**	25/20* (57/43%)	Psychotic disorders (Schizophrenia, Schizoaffective Disorder, Delusional Disorder	Semi-residential psychiatric day centre in Italy	Cross sectional	ISOS (Primary)	NPI	PSYCHE
4 Cavelti et al. (2016)	133	44.48 (11.88)	86/47 (65/35%)	Schizophrenia or schizoaffective disorder	Swiss community mental health services		ISOS (Primary)	PANSS, STAR-C, STAR-P	MGAF, SUMD, PAM, RAS
5 Drayton et al. (1998) (two studies a,b)	56	34 (10)	41/15 (73/27%)	Schizophrenia	Urban community psychiatric service (UK)	Cross sectional	ISOS & RSQ (Primary)		
	36	31 (10)	28/8 (78/22%)	Schizophrenia	Urban community psychiatric service (UK)	Cross sectional	RSQ (Primary)	CDS, PBI	EBS, IS
6 Espinosa et al. (2016)	50	32.5 (9.6)	30/20 (60/40%)	People with persecutory delusions	Psychiatric in-patient hospital (Spain)	Cross-sectional	RSQ (Primary)	BAI, BDI-II, ISMI	PSE-10, PANSS, MINIPLUS,

7 Fanning et al. (2012)	124	Not reported	77/47 (62/38%)	First episode psychosis	Early intervention for psychosis service in Ireland	Cross-sectional	RSQ (Secondary)	Referral, attendance and adherence rates	SCID-1, PSA, BS, SANS, SAPS,CDS, SCBAI, BIS, SCS, DAI
8 Fitzgerald (2010)	44	40.45**	44/0 (100/0%)	Serve Mental Illness (schizophrenia, schizophreniform and bipolar disorder	Long-term low security service and a community service, both in a specialist Mental Health service in North West England (UK).	Cross-sectional, two groups design	RSQ (Primary)	IS	
9 Georgiades et al. (2014)	39	25.3 (5.05)	29/10 (74/26%)	Psychotic disorders	Three Early Intervention in Psychosis Services within London (UK).	Cross-sectional	RSQ (Primary)	BRS, STICS	PSYRATS
10 +Jackson et al. (1998)	80	21.37**	51/29 (64/36%)	First episode of psychosis	Early Prevention and Intervention Centre (EPPIC) in metropolitan area of Australia (I/P, O/P, day programme and home treatment)	Treatment outcome study (pilot)	ISOS (Secondary)	EMS, BPRS, SANS	RPMIP, BDI, GSI, QLS
11 +Jackson et al. (2001) (Follow-up)	51	21.59**	31/20 (61/39%)	First episode of psychosis	Early Prevention and Intervention Centre (EPPIC) in metropolitan area of Australia (I/P, O/P, day programme and home treatment)	Treatment outcome study (1 year follow up)	ISOS (Secondary)	EMS, BPRS, SANS	RPMIP, BDI, GSI, QLS
12 Jackson et al. (2004)	35	25.8 (5.09)	26/9 (74/26%)	First episode of non-affective psychosis	'Incident cases' from a community-based early psychosis assertive outreach service in inner city Birmingham (UK).	Cross-sectional	RSQ (Primary)	IES, HADS	PANSS, PTSD scale (modified), HEQ, KGV (PAS)
13 Lemos-Giraldez et al. (2015)	95	34.74 (9.25).	67/28 (70.5/29.5 %)	Psychosis (Sz (65%), Sz-aff, delusional disorder, psychosis	Public mental health system in Spain.		RSQ (Primary)	STORI	

				unspec)					
14 Leonard et al. (2014)	43	Not reported Range 18-65	28/15 (65/35%)	Psychosis	UK NHS community and day services (convenience sample)	Cross-sectional, questionnaire design	RSQ (Primary)	MCQ-30	HADS
15 +Lu et al. (2011)	50	36.84 (11.43)	27/23 (54/46%)	History of multiple episodes of psychosis	University medical center (I/P) and a state psychiatric hospital in New Jersey (USA).	Cross-sectional	ISOS (Secondary)	TLEQ (abrv), PATS (mod), CA-PTSD, PDS	BPRS (exp), BDI-II, BAI, substance abuse screen
16 Modestin et al. (2004)	75	37 (11)	50/25 (67/33%)	Recovery phase following acute psychotic episode	Admissions to Psychiatric University Hospital, Zurich, Switzerland.	Cross-sectional	ISOS (Primary)	FSKN, PBI, PANSS	
17 Modestin et al. (2009)	64	37 (11)	36/28 (56/44%)	Inpatients recovering from an acute episode of a sz spectrum disorder	Admissions to Psychiatric University Hospital, Zurich, Switzerland.	Cross-sectional	ISOS & RSQ (Primary)	IPC, TPQ, PANSS, GAF, DEPS	
18 +Mueser et al. (2010)	38	22.5 (5.89)	26/12 (68/32%)	Recent onset psychosis	Four acute care, inpatient services (two state psychiatric hospitals and two academic medical centers) in New Hampshire and New Jersey (USA).	Cross-sectional	ISOS (Secondary)	TLEQ (abrv), PATS (mod), CA-PTSD, PDS	BPRS (exp), BDI-II, BAI, substance abuse screen
19 Mulligan & Lavender (2010)	73	41.37**	55/18 (75/25%)	Psychosis	Community mental health services (UK)	Cross-sectional	RSQ (Primary)	PBI, ASQ	HONOS
20 O'Donoghue et al. (2011)	68	40.86**	33/35 (49/51%)	People with an involuntary admission to hospital. Diagnoses: Sz/sz-aff (56%), Affective disorders	I/P psychiatric hospital in Dublin (Ireland) with follow-up visits in outpatient clinics or home visits.	Follow-up study	RSQ (Primary)	BIS	MAEI, DAI, GAF

				(37%) & Other (7%)					
21 +Rossi (2017)	921	40.17 (10.71)	641/280 (70/30%)	Schizophrenia	Community psychiatric outpatient units or mental health departments in Italy.	Cross-sectional	RSQ (Secondary)	PANSS, PSP	SCID-I-P, RSA, SES, ISMI, SERS, SNQ, Brief Cope, CDSS
22 +Rossi (2017 In Press)	903	40.20 (10.69)	631/272 (70/30%)	Schizophrenia	Community psychiatric outpatient units or mental health departments in Italy.	Cross-sectional	RSQ (Secondary)	As above?	
23 Shawyer (2012)	43	39 (10)	24/19 (56/44%)	Participants with problematic command hallucinations	Large number of public and private mental health services in metropolitan and regional areas of Victoria, Australia.	Treatment outcome study (CBT)	RSQ (Secondary)	Compliance with harmful command hallucinations schedule	SCID-I, NART-R, PANSS, MGAF, SHER, BAVQ-R, PSYRATS, QLESQ, CSQ, VAAS, IS
24 Stainsby (2010)	50	41.0 (13.2)	36/14 (72/28%)	Psychotic disorder: Sz (90%), Sz-aff (6%), depression with psychosis (4%)	Inner London (UK) NHS Rehabilitation and Residential Mental Health Service	Follow-up study (over two years)	RSQ (Primary)	IPQ-S, MANSA, BES, LSP, BPRS	
25 Staring et al. (2011)	103	39.0 (11.6)	72/31 (70/30%)	Psychotic disorders: Schizophrenia 74 Schizoaffective 29	Psychiatric outpatients participating in a multicenter RCT of treatment adherence therapy in Rotterdam (Netherlands).	Follow up study (one year)	RSQ (Primary)	PANSS	CIDI, IS, WAI, SES
26 Startup et al. 2006	29	29.7 (8.5)	22/7 (76/24%)	Psychotic disorders: Sz (24), Sz-aff (4) & Sz-form (1)	Recruits to a controlled trial of CBT. Admissions to three acute psychiatric hospitals in North Wales (Australia).	Controlled trial of CBT	ISOS adapted (Primary)	Dropout rates, AE, WAI-O	
27 +Tait et al. (2003)	50	33.8 (12.0)	31/19 (62/38%)	ICD–10 diagnosis of schizophrenia or	In-patients or home treatment for acute	Follow up (3 and 6 months)	RSQ (Primary)	SES, IS, SCI-PANSS	

				related disorders	psychosis from two urban mental health services (UK).				
28 +Tait et al. (2004)	50	33.8 (12.0)	31/19 (62/38%)	ICD–10 diagnosis of schizophrenia or related disorders	In-patients or home treatment for acute psychosis from two urban mental health services (UK).	Follow up (3 and 6 months)	RSQ (Primary)	PBI, EBS, SES	SCI-PANSS, RAAS, SOS, CDSS
29 Thompson et al. (2003)	196	21.8 (3.5)	144/52 (73.5/ 26.5%)	First episode psychosis (schizophrenia spectrum, affective, and mixed)	Admissions to Early Psychosis Prevention and Intervention Center (EPPIC) (Australia).	Follow up (12 months)	ISOS (Primary)	BPRS, SANS, QLS	RPMIP, EMS, PAS
30 Upthegrove et al. (2013)	67	23.64**	53/14 (79/21%)	First episode psychosis	Birmingham Early Intervention Service - urban mental health for FEP patients. (UK)	Cross-sectional	RSQ (Secondary)	PBIQ	CBIQ, IS
31 Vender et al. (2014)	156	41.02 (10.64)	59/97 (38/62%)	Psychotic disorders (sz, delusional disorder, sz-aff) and mood disorders with psychotic symptoms	Community Mental Health Center in Varese, an Urban and highly industrialized part of Italy.		ISOS & RSQ	PSYCHE	PANSS

*Results state 20 men/25 women but analysis in the article reveals the reverse

**Calculated from group means (weighted values)

+ Denotes follow-up study or same study as another article

Appendix 1.6: Scale reliability and accepted internal consistency ranges

Table 3: Studies reporting scale reliability

Study	Scale	Cronbach's alpha (α)	Alpha rating	Intraclass correlation (ICC)	ICC rating
Drayton et al. [5a]	RSQ	0.73	Acceptable	/	
Espinosa et al. [6]	RSQ	0.65	Questionable (reported as moderate)	/	
Lemos-Giraldez et al. [13]	RSQ	0.62[1]	Questionable	/	
Modestin et al. [16]	ISOS	0.86	Good	/	
Modestin et al. [17]	ISOS	0.93	Excellent	/	
Modestin et al. [17]	RSQ	0.78	Acceptable	/	
Mulligan & Lavender [19]	RSQ	0.52	Poor	/	
Stainsby et al. [24]	RSQ	0.73 0.76	Acceptable Acceptable	/ /	
Startup et al. [26]	ISOS	/ /		0.73 (one observer) 0.85 (two observers)	Good Excellent

[1] This study reports the alpha score of another (non-English language) article not included in the review (Nasillo et al., 2013)

Table 4: Cronbach's alpha ranges (Nunnaly, 1978)

Cronbach's alpha	Internal consistency
α ≥0.9	Excellent
0.9> α ≥0.8	Good
0.9> α ≥0.7	Acceptable
0.7> α ≥0.6	Questionable
0.6> α ≥0.5	Poor
0.5> α	Unacceptable

Table 5: Intra-Class Correlation (ICC) inter-rater agreement (Cicchetti, 1994).

ICC	Rating
Less than 0.40	Poor
Between 0.40 and 0.59	Fair
Between 0.60 and 0.74	Good
Between 0.75 and 1.00	Excellent

Appendix 1.7: Distribution of recovery style

Table 6: Recovery style distribution

Study	N	Integration n=	Sealing over n=	% integration	Recovery style measure used
Bell & Zito	97	36	61	37.1%[1]	BORRTI
Bernard et al.	23	20	3	87.0%	RSQ
Callegari et al.	45	23	22	51.1%	ISOS
Drayton et al.	56	29	27	51.8%	ISOS
		32	24	57.1%	RSQ
	36	19	17	52.8%	RSQ
Jackson et al.	35	26	9	74.3%	RSQ
Lemos-Giraldez et al.	95	71[2]	24[2]	74.7%[2]	RSQ
Modestin et al.	75	19[3]	11[3]	25.3%[3]	ISOS
Modestin et al.	64	7[3]	15[3]	10.9%[3]	ISOS
		-	-	-	RSQ
Staring et al.	103[4]	72[5]	30[5]	69.9%[5]	RSQ
Vender et al.	156	-	-	60.4%	ISOS
		-	-	79.2%	RSQ

[1] All 'mixed' participants (from original sample of 222) were removed from this study therefore the sample only represents groups at either pole. Percentage is calculated from n=97.
[2] Based on reviewer's clustering of data by collapsing six originally reported classifications into two groups.
[3] Figures are not comparable as only the groups at either pole (i.e. unequivocally integration or sealing over) are counted but percentage is expressed from the sample as a whole.
[4] Groups only add up to 102
[5] Based on reviewer's clustering of data by collapsing four originally reported classifications into two groups.

Appendix 1.8: Outcome measures and abbreviations

Table 7: Outcome measures

	Measure	Abbrv	Used in studies
1	Active Engagement Scale	AE	Startup et al. (26)
2	Attachment Style Questionnaire	ASQ	Mulligan & Lavender (19)
3	Beck Anxiety Inventory	BAI	Espinosa et al. (6) Lu et al. (15) Mueser et al. (18)
4	Beck Depression Inventory Beck Depression Inventory, 2nd Edition	BDI BDI-II	Jackson et al. (10, 11) Espinosa et al. (6) Lu et al. (15) Mueser et al. (18)
5	Beiser Scale	BS	Fanning et al. (7)
6	Beliefs about the Voices Questionnaire-Revised	BAVQ-R	Shawyer et al. (23)
7	Bexley Engagement Scale	BES	Stainsby et al. (24)
8	Brief Cope	/	Rossi et al. (21, 22)
9	Brief Psychiatric Rating Scale Brief Psychiatric Rating Scale – expanded version	BPRS BPRS	Jackson et al. (10, 11) Thompson et al. (29) Lu et al. (15) Mueser et al. (18) Stainsby et al. (24)
10	Brief Resilience Scale	BRS	Georgiades et al. (9)
11	Calgary Depression Scale for Schizophrenia	CDSS	Drayton et al. (5) Fanning et al. (7) Rossi et al. (21, 22) Tait et al. (28)
12	Carers Beliefs about Illness Questionnaire	CBIQ	Upthegrove et al. (29)
13	Client Satisfaction Questionnaire	CSQ	Shawyer et al. (23)
14	Clinician Administered PTSD Scale for DSM-IV	CA-PTSD	Lu et al. (15) Mueser et al. (18)
15	Compliance with harmful command hallucinations interview schedule	/	Shawyer et al. (23)
16	Composite International Diagnostic Interview, version 2.1	CIDI (2.1)	Staring et al. (25)
17	Depression Scale	DEPS	Modestin et al. (17)
18	Drug Attitude Index	DAI	Fanning et al. (7) O'Donoghue et al. (20)
19	Evaluation of Psychiatric Costs	PSYCHE	Callegari et al. (3) Vender et al. (31).
20	Evaluative Beliefs Scale	EBS	Drayton et al. (5) Tait et al. (28)
21	Explanatory Model Scale Explanatory Model Scale (adapted)	EMS EMS	Jackson et al. (10, 11) Thompson et al. (29)
22	Eysenck Personality Questionnaire	EPQ	Bell & Zito (1)
23	Frankfurt Self-Concept Inventory	FSKN	Modestin et al. (16)

24	Global Assessment of Functioning Scale Global Assessment of Functioning Scale - modified	GAF MGAF	Modestin et al. (17) O'Donoghue et al. (20) Cavelti et al. (4) Shawyer et al. (23)
25	The Health of the Nation Outcome Scales	HONOS	Mulligan & Lavender (19)
26	Hospital anxiety and depression scale	HADS	Bernard et al. (2) Jackson et al. (12) Leonard et al. (14)
27	Hospital Experiences Questionnaire	HEQ	Jackson et al. (12)
28	Illness Perceptions Questionnaire for Sz	IPQ-S	Stainsby et al. (24)
29	Impact of events scale Impact of events scale-revised	IES IES-R	Jackson et al. (12) Bernard et al. (2)
30	Insight scale/Birchwood Insight Scale	IS/BIS	Bernard et al. (2) Drayton et al. (5) Fanning et al. (7) Fitzgerald (8) O'Donoghue et al. (20) Shawyer et al. (23) Staring et al. (25) Tait et al. (27) Upthegrove et al. (30)
31	Internalized Stigma of Mental Illness	ISMI	Espinosa et al. (6) Rossi et al. (21, 22)
32	Life Skills Profile	LSP	Stainsby et al. (24)
33	Locus of Control (IPC-Fragebogen zu Kontrollüberzeugungen)	IPC	Modestin et al. (17)
34	MacArthur Admission Experience Interview	MAEI	O'Donoghue et al. (20)
35	Manchester Short Assessment of Quality of Life	MANSA	Stainsby et al. (24)
36	Meta-cognitions Questionnaire (short version)	MCQ-30	Leonard et al. (14)
37	MINI-International Neuropsychiatric Interview	MINI-PLUS	Espinosa et al. (6)
38	National Adult Reading Test-Revised	NART-R	Shawyer et al. (23)
39	Neuropsychiatric Inventory	NPI	Callegari et al. (3)
40	Parental Bonding Instrument	PBI	Drayton et al. (5) Modestin et al. (16) Mulligan & Lavender (19) Taot et al. (28)
41	Personal and Social Performance Scale	PSP	Rossi et al. (21, 22)
42	Personal Beliefs about Illness Questionnaire – revised	PBIQ-R	Upthegrove et al. (30)
43	Positive and negative affect schedule	PANAS	Bernard et al. (2)
44	Positive and Negative Syndrome Scale	PANSS	Bell & Zito (1) Cavelti et al. (4) Espinosa et al. (6) Jackson et al. (12) Modestin et al. (16) Modestin et al. (17) Rossi et al. (21, 22) Shawyer et al. (23)

	Structured Clinical Interview for the Positive and Negative Syndrome Scale	SCI-PANSS	Staring et al. (25) Vender et al. (31) Tait et al. (27, 28)
45	Post Traumatic Diagnostic Scale	PDS	Lu et al. (15) Mueser et al. (18)
46	Post Traumatic Syndrome Disorder Scale (modified)	PTSD scale	Jackson et al. (12)
47	Premorbid Adjustment Scale	PAS	Thompson et al. (29)
48	Premorbid Social Adjustment Scale	PSA	Fanning et al. (7)
49	Present State Examination	PSE-10	Espinosa et al. (6)
50	Psychiatric Assessment Scale	KGV	Jackson et al. (12)
51	Psychosis Attachment Measure	PAM	Cavelti et al. (4)
52	Psychotic symptom rating scales	PSYRATS	Georgiades et al. (9) Shawyer et al. (23)
53	PTSD assessment tool for schizophrenia (modified)	PATS	Lu et al. (15) Mueser et al. (18)
54	Quality of Life Enjoyment and Satisfaction Questionnaire	QLESQ	Shawyer et al. (23)
55	Quality of Life Scale	QLS	Jackson et al. (10, 11) Thompson et al. (29)
56	Recovery Assessment Scale	RAS	Cavelti et al. (4)
57	Resilience Scale for Adults	RSA	Rossi et al. (21, 22)
58	Revised Adult Attachment Scale	RAAS	Tait et al. (28)
59	Royal Park Multidiagnostic Instrument for Psychosis	RPMIP	Jackson et al. (10, 11) Thompson et al. (29)
60	Scale for Assessment of Negative Symptoms	SANS	Fanning et al. (7) Jackson et al. (10, 11) Thompson et al. (29)
61	Scale for Assessment of Positive Symptoms	SAPS	Fanning et al. (7)
62	Scale to Assess the Therapeutic Relationship - Patient Version Scale to Assess the Therapeutic Relationship - Clinician Version	STAR-P STAR-C	Cavelti et al. (4) Cavelti et al. (4)
63	Scale to assess Unawareness of Mental Disorder	SUMD	Cavelti et al. (4)
64	Self and Other Scale	SOS	Tait et al. (28)
65	Self-consciousness scale	SCS	Fanning et al. (7)
66	Self-Esteem Rating Scale	SERS	Rossi et al. (21, 22)
67	Service Engagement Scale	SES	Rossi et al. (21) Staring et al. (25) Tait et al. (27, 28)
68	Short Trier Inventory for Chronic Stress	STICS	Georgiades et al. (9)
69	Single Hallucination Episode Record	SHER	Shawyer et al. (23)
70	Social Cognitive Behaviour Anxiety Index	SCBAI	Fanning et al. (7)
71	Social Network Questionnaire	SNQ	Rossi et al. (21)
72	Stages of Recovery Instrument	STORI	Lemos-Giraldez et al. (13)
73	Structured Clinical Interview for DSM-III-R Diagnosis Structured Clinical Interview for DSMIV Axis I	SCID-III-R SCID-1	Bell & Zito (1) Shawyer et al. (23)

	Disorders Structured Clinical Interview for DSM-IV-TR Axis I Disorders-Research Version Structured Clinical Interview for DSM-IV — Patient version	 SCID-1 SCID-I-P	 Fanning et al. (7) Rossi et al. (21, 22)
74	Substance abuse screen	/	Lu et al. (15) Mueser et al. (18)
75	Symptom Checklist 90 Revised (General Symptom Index)	SCL-90-R (GSI)	Jackson et al. (10, 11)
76	Traumatic Life Events Questionnaire (abbreviated)	TLEQ	Lu et al. (15) Mueser et al. (18)
77	Tridimensional personality questionnaire	TPQ	Modestin et al. (17)
78	Voices Acceptance and Action Scale	VAAS	Shawyer et al. (23)
79	Wisconsin Card Sorting Test	WCST	Bell & Zito (1)
80	Working Alliance Inventory Working Alliance Inventory – Observers Version	WAI WAI-O	Staring et al. (25) Startup et al. (26)

Appendix 2.1: Author Guidelines for Submission to Schizophrenia Bulletin

Retrieved 15th March 2018

Information for Authors

MANUSCRIPT PREPARATION

All manuscripts are submitted and reviewed via the journal's web-based manuscript submission system accessible at http://mc.manuscriptcentral.com/szbltn . New authors should create an account prior to submitting a manuscript for consideration.

Manuscripts submitted to *Schizophrenia Bulletin* should be prepared following the *American Medical Association Manual of Style,* 10th edition. The manuscript text (including tables) should be prepared using a word processing program and saved as an .rtf or .doc file. Other file formats will not be accepted. Figures must be saved as individual .tif files and should be numbered consecutively (i.e., Figure 1.tif, Figure 2.tif, etc.). The text must be double-spaced throughout and should consist of the sections described below.

Title Page

This page should consist of (i) the complete title of the manuscript, (ii) a running title not to exceed 50 characters including spaces, (iii) the full name of each author and the authors' institutional affiliations, (iv) name, complete address, telephone, fax, and e-mail address of the corresponding author, and (v) separate word counts of the abstract and text body. Please note that there can only be one corresponding author, per journal style

Manuscript Length

Manuscripts should be concisely worded and should not exceed 5,000 words for major reviews, 4,000 words for regular articles, or 2,500 words for invited special features. The word count should include the abstract, text body, figure legends, and acknowledgments and must appear together with the abstract word count on the title page of the manuscript. Supplementary data, including additional methods, results, tables, or figures will be published online.

Abstract

Provide a summary of no more than 250 words describing why and how the study, analysis, or review was done, a summary of the essential results, and what the authors have concluded from the data. The abstract should not contain unexplained abbreviations. Up to six key words that do not appear as part of the title should be provided at the end of the abstract.

Main Text

Unsolicited original manuscripts reporting novel experimental findings should be comprised of these sections, in this order: Abstract, Introduction, Methods, Results, Discussion, Acknowledgments, References, and Figure Legends. Review articles must contain an abstract; however, the body of the

text can be organized in a less structured format. Authors of review articles are encouraged to use section headers to improve the readability of their manuscript.

Number pages consecutively beginning with the title page. Spelling should conform to that used in *Merriam-Webster's Collegiate Dictionary,* eleventh edition. Clinical laboratory data may be expressed in conventional rather than Système International (SI) units.

Acknowledgments

These should be as brief as possible but include the names of sources of logistical support.

References

Authors are encouraged to be circumspect in compiling the reference section of their manuscripts. Please note: references to other articles appearing in the same issue of the journal must be cited fully in the reference list.

Each reference should be cited in consecutive numerical order using superscript arabic numerals, and reference style should follow the recommendations in the *American Medical Association Manual of Style,* 10th edition, with one exception: in the reference list, the name of all authors should be given unless there are more than 6, in which case the names of the first 3 authors are used, followed by "et al."

- Book: Talairach J, Tournoux P. *Co-planar stereotaxic atlas of the human brain.* New York, NY: Thieme Medical Publishers; 1998.
- Book chapter: Goldberg TE, David A, Gold JM. Neurocognitive deficits in schizophrenia. In: Hirsch SR, Weinberger DR, eds. *Schizophrenia.* Oxford, England: Blackwell Science; 2003:168-184.
- Journal article: Thaker GK, Carpenter WT. Advances in schizophrenia. *Nat Med*2001;7:667-671.
- Journal article with more than 6 authors: Egan MF, Straub RE, Goldberg TE, et al. Variation in GRM3 affects cognition, prefrontal gluatamate, and risk for schizophrenia.*Proc Natl Acad Sci USA* 2004;101:12604-12609.
- Article published on Advance Access only: Gilad, Y. and Lancet, D. March 5, 2003. Population Differences in the Human Functional Olfactory Repertoire. *Mol Biol Evol*doi:10.1093/molbev/msg013.
- Article first published on Advance Access: Gilad, Y. and Lancet, D. 2003. Population Differences in the Human Functional Olfactory Repertoire *Mol Biol Evol* 2003;20:307-314. First published on March 5, 2003, doi:10.1093/molbev/msg013.

Journal names should be abbreviated in accordance with *Index Medicus* (www.nlm.nih.gov/tsd/serials/lji.html).

Manuscripts in which the references do not follow this format will be returned for retyping. References to meeting abstracts, material not yet accepted for publication, or personal communications are not acceptable as listed references and instead should be listed parenthetically

in the text. It is the authors' responsibility for obtaining the necessary permissions from colleagues to include their work as a personal communication.

Figures and Tables

Full length manuscripts including regular and invited theme articles should contain no more than a combined total of 5 tables and figures. Theme introductions and special features are limited to 2 tables or figures (total). Figures and tables must be referred to using arabic numbers in order of their appearance in the text (e.g., Figure 1, Figure 2, Table 1, Table 2, etc.).

Tables should be created with the table function of a word processing program; spreadsheets are not acceptable. Include only essential data, and format the table in a manner in which it should appear in the text. Each table must fit on a single manuscript page and have a short title that is self-explanatory without reference to the text. Footnotes can be used to explain any symbols or abbreviations appearing in the table. Do not duplicate data in tables and figures.

Each figure should have a separate legend that clearly identifies all symbols and abbreviations used. The legend should be concise and self-explanatory and should contain enough information to be understood without reference to the text.

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Supporting material that is not essential for inclusion in the full text of the manuscript, but would nevertheless benefit the reader, can be made available by the publisher as online-only content, linked to the online manuscript. The material should not be essential to understanding the conclusions of the paper, but should contain data that is additional or complementary and directly relevant to the article content. Such information might include more detailed methods, extended data sets/data analysis, or additional figures (including color). It is standard practice for appendices to be made available online-only as supplementary material. All text and figures must be provided in separate files from the manuscript files labelled as supplementary material in suitable electronic formats (instructions for the preparation of supplementary material can be viewed here).

All material to be considered as supplementary material must be submitted at the same time as the main manuscript for peer review. It cannot be altered or replaced after the paper has been accepted for publication. Please indicate clearly the material intended as supplementary material upon submission. Also ensure that the supplementary material is referred to in the main manuscript where necessary.

Appendix 2.2: Participant Information Sheet

Compassion, memory and coping: A study identifying change processes underpinning recovery

Participant Information Sheet (Version 4.1, 28th July 2014)

Chief Investigator:

Professor Andrew Gumley

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Invitation to Participate in a Research Project

1. What is the research about?

We are looking at compassion, memory, and coping in people who have experienced complex mental health problems. Many of the newer psychological therapies for serious mental health problems focus on reducing distress and promoting well-being through changing the person's relationship with their experiences. An important aspect of this is the development of a non-judgemental, or compassionate attitude. This study aims to better understand the needs of people who have experienced mental health problems and what we can do to help people overcome their difficulties. Specifically, we want to understand compassion, and how this relates to people's memory and to their recovery. We also want to

test a new way of measuring how people cope with having a serious mental health difficulty.

2. What do you mean by 'compassion'?

By compassion we mean kindness, warmth, care, understanding and empathy for ourselves and others. It means having an understanding and feeling moved to help and support ourselves and others.

3. Why have I been asked to take part?

We are asking people who live in NHS Greater Glasgow and Clyde and have difficulties with their mental health to take part in the study. Either a member of the mental health team responsible for your care (e.g. Consultant Psychiatrist, Clinical Psychologist or CPN) has suggested that you might be interested in participating in this study, or you have responded to an advert we have placed in the charity Bipolar Scotland.

4. What will I be asked to do if I take part?

If you choose to take part, you will be asked to meet with a researcher to complete some interviews and questionnaires. Before this, we will ask your permission to contact an NHS Greater Glasgow and Clyde health professional involved in your care. This might be your GP, psychiatrist, or mental health keyworker. This is so we can check that you are suitable to take part in the study and to check that taking part isn't going to interfere with your care in any way.

We will then arrange to meet with you to answer any questions you may have about the study and to discuss taking part. If you decide to go ahead, we will ask you to complete an interview that asks about your memory for positive and negative experiences and a second interview that asks about your experiences of compassion. These interviews will be audio recorded and later transcribed so that they can be analysed by the researchers. We will then ask you to complete 8 questionnaires. Finally, we will also ask for your permission to examine your case notes to obtain information about your age, diagnosis, number of hospitalisations, and duration of illness.

The measures will take up to 2 ½ hours to complete. You can choose to meet with the researcher over two or three occasions to complete the measures. You will be able to take as many breaks as you like and refreshments will be available at these times. You will receive one-off £10 payment to compensate you for your time and inconvenience. Afterwards, you will receive a courtesy phone call to thank you for your contribution, confirm that you are have not experienced any undue distress following participation, and to answer any further questions you may have**.**

5. Do I have to take part?

No. Taking part is entirely up to you. If you do not wish to take part it will not affect any treatment that you receive. The research team will give you at least 24 hours to decide whether you want to take part in the study. If you still want to participate, then we will make arrangements to meet.

6. Can I change my mind?

Yes. You can change your mind at any time and do not need to give a reason. Your care will not be affected in any way either now or in the future.

7. What are the benefits of taking part?

There will be no immediate or direct benefits to you if you decide to take part. However you will have the opportunity to experience being part of a psychology research study and to contribute to research that may be of value to people with mental health difficulties**.** Your participation will help us to better understand the needs of people who have experienced mental health problems and will potentially help develop new psychological therapies that aim to help people recover.

8. Is there a downside to taking part?

In the interview you will be asked to talk about previous experiences you have had. The interviews may prompt you to remember positive experiences as well as upsetting experiences from the past. However, we will not deliberately ask you embarrassing or upsetting questions and you do not have to talk about any experiences that you do not want

to. We do not expect you to be worried or distressed by taking part and previous studies have shown it is exceedingly rare for bad outcomes or difficulties to occur in people who participate in such research. However, if participating in the study did cause you distress, we will help you to access appropriate support if needed. If you have any concerns about what we discuss, you can contact the researcher for more information or address this with your keyworker or another member of your clinical treatment team.

9. Will my information be confidential?

All the answers you give will be treated confidentially, just like your medical records. The information that you share will be made anonymous so that you cannot be identified from it and and the research questionnaires will only be labelled with a code, not your name. All data including recordings and transcripts will be stored in a password-protected computer. Paper copies of the data will be stored on University of Glasgow premises and will be accessible only to researchers who are directly involved with the research. Only the researcher who interviews you will hear the original recordings of the interviews. Once the interview is transcribed, the audio copy will be destroyed. The transcribed and anonymised interview and questionnaires will then be analysed by the research team. If you agree, we may use quotations from conversations in reports about this research.

The only instance where the information you give may be shared is if it suggests that you or someone else is at risk or danger. In such an instance, we may be required to tell others involved in your care (e.g. your keyworker or psychiatrist). We will always make a reasonable attempt to discuss this with you beforehand and explain why we are concerned.

We will ask your permission to inform your GP and mental health team that you are taking part in the study.

10. What happens to the consent form?

To ensure anonymity and confidentiality, the consent form will be kept separately from the transcribed interview in a locked filing cabinet within University of Glasgow premises in the department of Mental Health and Wellbeing.

11. What will happen to the results of the study?

The results will be published in a medical journal and through other routes to ensure that the general public are made aware of the findings. You will not be identified in any report/publication arising from this study.

12. Who is organising and funding the research?

The University of Glasgow. The study is being undertaken by a Trainee Clinical Psychologist towards an academic qualification (Doctorate in Clinical Psychology).

13. Who has reviewed the study?

The study has been reviewed by the University of Glasgow to ensure that it meets standards of scientific conduct. It has also been reviewed by the West of Scotland Research Ethics Committee to ensure that it meets standards of ethical conduct.

14. Can I speak to someone who is independent of the study?

Yes. Professor Tom McMillan is not involved in the study and can answer questions or give advice. His telephone number is 0141 211 3920.

15. What if there is a problem?

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. The contact number is 0141 211 3927.

If you remain unhappy and wish to complain formally, you can do this through NHS Greater Glasgow and Clyde NHS Complaints. Details can be obtained from 0141 201 4500.

Thank you for taking the time to read this information sheet.

All participants are invited to contact Gillian on g.fraser.1@research.gla.ac.uk at any stage with any queries about the study.

Appendix 2.3: Consent Form

Compassion, memory and coping: A study identifying change processes underpinning recovery

CONSENT FORM (Version 4.1, 28th July 2014)

Researchers: Ms Erin Toal, Ms Gillian Fraser, Ms Emma Rhodes

Supervisors: Professor Andrew Gumley, Dr Hamish McLeod

Local Lead Investigators: Dr Lisa Reynolds, Dr Jaqueline Smith,

Dr Rachel Bonney, and Dr Deborah McQuaid

Please write your initials in the box if you agree with the statement:

1. I have read the information sheet (Version 4.1, 28th July 2014) ☐

2. I have had the opportunity to discuss and ask questions about the project and have received satisfactory answers to the questions. ☐

3. I understand that I am free to withdraw my participation, at any time, without having to give a reason, and without this affecting my future care. ☐

4. I understand that the interview will be recorded and transcribed, that the original recording will be destroyed, and that all personal data will be removed from the transcript. ☐

5. I understand that if I become upset during the research interview the researcher will help me to access appropriate professional support if this is required. ☐

6. I understand that a member of the research team will examine my case notes to obtain data about my age, diagnosis, number of hospital admissions, and length of illness. ☐

7. I understand that if I say anything that makes the researchers concerned about my safety or the safety of another person, this information may be communicated to a third party. I also understand that the researcher will take reasonable steps to discuss this with me beforehand. ☐

8. I understand that remarks I make may be included in an anonymous form in reports about this research (if you do not consent to this, please leave this box blank) ☐

9. I agree that my GP and the Mental Health Team can be informed that I am participating in the study. ☐

10. I consent to take part in this research project. ☐

Participant signature: ..... **Date: ……..**

Researcher signature: ..... **Date: ……**

Appendix 2.4: Ethics approval

WoSRES

West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 3
Ground Floor – The Tennent Institute
Western Infirmary
38 Church Street
Glasgow G11 6NT
www.nhsggc.org.uk

Professor Andrew I Gumley
Chair of Psychological Therapy
University of Glasgow
Mental Health and Wellbeing
Gartnavel Royal Hospital
Glasgow
G12 0XH

Date 22nd February 2013
Your Ref
Our Ref
Direct line 0141 211 2123
Fax 0141 211 1847
E-mail Liz.Jamieson@ggc.scot.nhs.uk

Dear Professor Gumley

Study title:	**Compassion memory and coping: A study identifying change processes underpinning recovery**
REC reference:	**13/WS/0014**
IRAS project ID:	**114280**

Thank you for your letter of 12 February 2013, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered in correspondence by a sub-committee of the REC. A list of the sub-committee members is attached. The Sub Committee commented as follows:

- The Sub Committee noted your response regarding self harm and after discussion agreed as a compromise and in order not to put the research at risk that patients should only be considered for recruitment to the study six months post self harm. The Co-ordinator contacted you and you agreed to this compromise. You then submitted an amended Protocol Version 4.1 dated 22nd February 2013 showing those who were less than six months post self harm would not be recruited to the study.

We plan to publish your research summary wording for the above study on the NRES website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact

the Co-ordinator Mrs Liz Jamieson, Liz.Jamieson@ggc.scot.nhs.uk.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
GP/Consultant Information Sheets	4	08 February 2013
Investigator CV		
Other: Unfavourable Opinion Letter		15 November 2012
Other: Provisional Opinion Letter		15 November 2012
Other: Letter addressing issues from Unfavourable Opinion Letter	1 January 2013	
Other: Approval Letter - Erin Toal		14 August 2012
Other: Approval Letter - Emma Rhodes		14 August 2012
Other: CV - Supervisor - Dr H J McLeod		
Other: CV Student - Erin Toal		
Other: CV Student - Emma Rhodes		
Other: CV Student - Gillian Fraser		
Participant Consent Form	4.0	08 February 2013
Participant Information Sheet	4.0	08 February 2013
Participant Information Sheet: Clinical Teams	1	12 February 2013
Protocol	4.1	22 February 2013
Questionnaire: Narrative Interview for Compassion-Revised		
Questionnaire: Coping Inventory for Stressful Situations - Shortened Version		
Questionnaire: Psychosis Attachment Measure		
Questionnaire: How I Typically Act Towards Myself in Difficult Times		
Questionnaire: Fears of Compassion Scales		
Questionnaire: Altman Self Rating Mania Scale		
Questionnaire: HADS		
Questionnaire: Interpersonal Autobiographical Memory Task (I-AMT) Protocol		
Questionnaire: CTQ		
Questionnaire: WTAR Word List		
REC application		09 January 2013
Response to Request for Further Information		12 February 2013

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a

favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

13/WS/0014	**Please quote this number on all correspondence**

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

With the Committee's best wishes for the success of

this project. Yours sincerely

Liz Jamieson
Committee Co-ordinator
On behalf of Dr Adam Burnel, Chair

Enclosures List of names and professions of members who were involved in the review.
'After Ethical Review – Guidance for Researchers'

Copy to: Dr Erica Packard, R&D

West of Scotland REC 3

Sub-Committee of the REC meeting on 28

February 2013 Committee Members:

Name	*Profession*	*Present*	*Notes*
Liz Ross	Lay Member	Yes	
Dr Adam Burnel	Consultant Psychiatrist - Chair	Yes	
Mrs Mary Keenaghan	Clinical Auditor	Yes	
Mr Eoin MacGillivray	Retired Dentist	Yes	
Dr Stuart Milligan	Lecturer in Palliative and Cancer Care	Yes	
Dr Stephen Noble	Consultant Anaesthetist	Yes	
Mrs Gillian Notman	Joint Occupational Therapy Lead Advisor	Yes	
Mrs Rosie Rutherford	Lay Member	Yes	

Appendix 2.5: R&D Management Approval

NHS
Greater Glasgow and Clyde

Coordinator/Administrator: Dr Erica Packard/Mrs Elaine O'Neill
Telephone Number: 0141 211 6208
E-Mail: erica.packard@ggc.scot.nhs.uk
Website: www.nhsggc.org.uk/r&d

R&D Management Office
Western Infirmary
Tennent Institute
1st Floor 38 Church Street
Glasgow, G11 6NT,

15 March 2013

Dr Jackie Smith
Arran Centre
121 Orr Street
Glasgow G40 2BJ

NHS GG&C Board Approval

Dear Dr Smith

Study Title:	**Compassion, memory and coping: A study identifying change processes underpinning recovery**
Principal Investigator:	**Dr Jackie Smith**
GG&C HB site	**North and East Dumbartonshire Mental Health Services**
Sponsor	**NHS Greater Glasgow and Clyde**
R&D reference:	**GN13CP055**
REC reference:	**13/WS/0014**
Protocol no: (including version and date)	**V4.1; 22/02/13**

I am pleased to confirm that Greater Glasgow & Clyde Health Board is now able to grant **Approval** for the above study.

Conditions of Approval

1. **For Clinical Trials** as defined by the Medicines for Human Use Clinical Trial Regulations, 2004
   a. During the life span of the study GGHB requires the following information relating to this site
      i. Notification of any potential serious breaches.
      ii. Notification of any regulatory inspections.

It is your responsibility to ensure that all staff involved in the study at this site have the appropriate GCP training according to the GGHB GCP policy (www.nhsggc.org.uk/content/default.asp?page=s1411), evidence of such training to be filed in the site file.

2. **For all studies** the following information is required during their lifespan.
   a. Recruitment Numbers on a monthly basis
   b. Any change of staff named on the original SSI form
   c. Any amendments – Substantial or Non Substantial
   d. Notification of Trial/study end including final recruitment figures
   e. Final Report & Copies of Publications/Abstracts

Please add this approval to your study file as this letter may be subject to audit and monitoring.

Your personal information will be held on a secure national web-based NHS database.

I wish you every success with this research study

Yours sincerely,

EPackard

Dr Erica Packard
Research Co-ordinator

Cc: Prof Andrew Gumley

Appendix 2.6: Narrative Interview for Compassion-Revised

Narrative Interview For Compassion-Revised (NCS-R)

GUIDELINES

It is expected that some flexibility will be required when administering the narrative interview for exploring compassion. Adhering to these guidelines should, therefore, not be at the expense of demonstrating such flexibility.

Initial phase of the interview: semantic definition of compassion

- It is important in this initial phase to engage the participant with the interview process. Time should be spent putting the participant at ease and allaying any fears with regards to the interview being a test. The interviewer should take a curious stance and convey qualities such as warmth, empathy and respect. The aim is to establish the basis for collaboration during the interview

Next phase of the interview: episodic accounts of compassion

- Similar to the initial phase of the interview, the interviewer's overall objective should be to give enough support to participants to facilitate their recalling of episodic accounts but to refrain from being too persistent in accessing autobiographical accounts. Give enough support so that the participant develops an understanding of the expectations of the interviewer
- Give the participant enough time to recall, allow them to think about the question and reassure if it is taking a bit of time
- An interested silence is warranted when participants indicate by their non-verbal behavior that they are actively thinking through or refining their choices
- Don't leave participants in silences for very long periods as this will likely make them feel uncomfortable
- If participants communicate that they cannot come up with an example say that is ok with the interviewers tone making it clear the response is perfectly acceptable
- If participants change the experience mid-flow the interviewer permits them to so and does not go back to the original experience described
- If participants give one specific but poorly elaborated experience or a "scripted" or "general" experience such as "I always give a monthly subscription to charity", the interviewer probes for a second example. Say *"that is a good example I am wondering if you can give me another example that is a more detailed experience of ……"*. The interviewer takes an interested and curious stance when doing this. If another "scripted"/"general" or poorly elaborated experience is offered, or if participants indicate in their response that they wish to stay with the example they have given, the interviewer should be accepting, and move on

Administration of questions

- The following probes can helpful in supporting the participant in their recall of their episodic accounts of compassion:
    - *Can you describe the situation?*
    - *When was that?*
    - *Who was there?*
    - *How did you respond?*
    - *How did you feel?*

  If the interviewer feels more elaboration is needed some more prompts can be given. The prompts should be specific enough so that the participant is not left guessing what the interviewer is looking for. In relation to "self to others" a couple of prompts can be given to encourage full expansion and elaboration. In relation to "others to self" one further prompts can be given. In relation to "self to self" one further prompt can be given. Examples of prompts that can be given:

    - *I am interested to know more about that can you tell me a bit more?*
    - *I am wondering what makes you say that?*

- The following probe can be helpful in exploring the participant's state of mind with regards to the recalled episodic memory:
    - *What is it about your experience that is compassionate for you?*

Winding up phase of the interview

- In the winding up phase the interviewer should ensure the participant is at ease and allay any fears they have with the process they have just engaged in. Again the interviewer should take a curious stance and convey qualities such as warmth, empathy and respect.

INTERVIEW

Initial phase: semantic definition of compassion

"Now I would like us to spend some time exploring your experiences of compassion. It will be helpful to first spend some time in developing a shared understanding of the meaning of compassion. I have some cards here to help us do this".

This is a collaborative task and therefore should be part of an ongoing discussion.

Show two or three cards and invite the participant to compare and contrast the different words. For example "*so the first words we have are ……. what do you think about those?*"

Explore all the words and encourage the participant to identify 3 to 5 that best describe compassion. It is ok if the participant would like more than 5 words in their definition of compassion.

If the participant generates additional descriptions that are not provided on the cards, use a blank card to include this in the card sort exercise.

In the course of the task if it is clear that the participant is struggling to grasp an understanding of compassion provide a definition. *"By compassion we mean expression of kindness, warmth, care, understanding and empathy for ourselves and others. It means having an understanding and feeling moved to help and support ourselves and others".*

At the end of this initial interview phase ensure the selected cards are clearly laid out in front of the participant and remove the words not selected.

Next phase of the interview: episodic accounts of compassion

"Now that we have a shared understanding of compassion we can go on to explore your experiences of compassion. When exploring your experiences examples can be taken from your most recent or distant past. There are no right or wrong answers here, what counts is your experiences and feelings. When thinking about your experiences and feelings please take your time and keep in mind the words you chose to best encapsulate what compassion means for you" [Point to the selected cards on the table]. *"Like the last task you only need to speak about experiences and feelings you feel comfortable sharing. Before starting this I am wondering if you have any questions?"*

1) *"I wonder if you could tell me about a time when you have expressed or shown compassion to another person?"*

   Examples of probes to explore the episodic memory:

   - *Can you describe the situation?*
   - *When was that?*
   - *Who was there?*
   - *How did you respond?*
   - *How did you feel?*

Examples of more specific prompts for elaboration of the episodic memory if required:

- *I am interested to know more about that can you tell me a bit more?*
- *I am wondering what makes you say that?*

Example of a probe to explore the state of mind with regards to the recalled memory:

- *What is it about your experience that is compassionate for you?*

2) *"Can you tell me about a time that another person expressed compassion towards you?"*

Examples of probes to explore the episodic memory:

- *Can you describe the situation?*
- *When was that?*
- *Who was there?*
- *How did you respond?*
- *How did you feel?*

Examples of more specific prompts for elaboration of the episodic memory if required:

- *I am interested to know more about that can you tell me a bit more?*
- *I am wondering what makes you say that?*

Example of a probe to explore the state of mind with regards to the recalled memory:

- *What is it about your experience that is compassionate for you?*

3) *"Can you tell me about a time where you expressed compassion towards yourself?"*

Examples of probes to explore the episodic memory:

- *Can you describe the situation?*
- *When was that?*
- *Who was there?*
- *How did you respond?*
- *How did you feel?*

Examples of more specific prompts for elaboration of the episodic memory if required:

- *I am interested to know more about that can you tell me a bit more?*
- *I am wondering what makes you say that?*

Example of a probe to explore the state of mind with regards to the recalled memory:

- *What is it about your experience that is compassionate for you?*

Winding up phase of the interview

"Is there anything you feel you have learned from the experiences we have talked about? What are your hopes for the future? I am wondering if you have any questions for me?"

Participants are given a contact number for the research team and encouraged to feel free to call if they have any questions about the process they have engaged in. Also discussion around supports the participant has already may be appropriate here such as their community psychiatric nurse, partner, keyworker, psychologist etc

The interviewer now brings the participants attention to other topics before moving on to completing the rest of the questionnaires.

Recovery after Psychosis: Narrative Coding Scale

		No Info (NI)	Can't Rate (CR)	-1	0	1	2	3	4	5	6	7	8	9
Inferred Background Experiences	**Inferred Background: Experiences of Kindness (EoK)** The extent to which a speaker appears to have experienced kind, loving or supportive behaviour in their interactions with others. The degree to which the narrative conveys a firm sense of emotional support and availability of others, especially during times of stress. Evidence that, throughout the individuals lifespan significant others have promoted a sense of safeness in the face of threat or uncertainty													
	Inferred Background: Experiences of Interpersonal Threat (EoIT) Experiences characterised by rejection of the individual's needs, and responses from others that are threatening, destabilising or actively intrusive. Degree to which inferred experiences violate the individual's sense of safeness, particularly with respect to other's as a source of safeness.													
Recovery	**Recovery: Integration Scale (INT)** Awareness of the continuity of their mental experiences and personality before the psychotic experience, during psychosis and through recovery. Balanced awareness of both the pleasure and the pain involved in psychotic experiences. Experiences used as a source of information in making sense of conflicts, relationships and behaviour.													
	Recovery: Sealing Over/Avoidance Scale (SO/A) Degree of discrepancy between speaker's presentation of their experiences and the reader's inferences regarding their actual experiences. Inferred attempt within the discourse to overtly or subconsciously avoid, downplay, minimise or deny discussion of difficult or potentially distressing material pertaining to sources of stress and or mental health difficulties													
	Recovery: Ruminative Preoccupation Scale (RP) Speaker may not be able to control the emotional aspect of the dialogue, leading to a preoccupation and fear. The reader has the sense that the person is lost or preoccupied by his or her own experiences and memories.													

Appendix 2.8: Measures to be administered for other trainees

- **Childhood Trauma Questionnaire** (CTQ, Bernstein & Fink, 1997). A 28 item self report questionnaire measuring 5 types of maltreatment: emotional abuse; physical abuse; sexual abuse; emotional neglect; physical neglect. The CTQ shows good reliability and validity within clinical samples (Bernstein et al., 1998).
- **Fears of Compassion Scales** (Gilbert et al., 2011). Three self-report rating scales measuring fear of: compassion for others (13 items), compassion from others (15 items), and compassion for self (17 items). This measure is currently being developed and requires further research regarding its psychometric properties.
- **Wechsler Test of Adult Reading** (WTAR; Wechsler, 2001). A word pronunciation test, consisting of 50 words, which provides an estimate of pre-morbid intellectual functioning. It has UK norms and good reliability and validity.
- **Interpersonal Autobiographical Memory Task** (I-AMT; adapted from Williams & Broadbent, 1986). A procedure designed to elicit autobiographical memories in a range of social contexts falling into three categories: affiliative, threat-focussed, and drive focussed.

Appendix 2.9: Excerpts from researcher coding journal

Participant	Notes on coding
BP01	*Dialogue is collaborative, open and relevant throughout. Reflective in places. Clear and orderly with one or two slips of past/present tense or a slip of the tongue. Open to exploring negatives as well as positives. Emotion still very raw in places, although able to control it to a degree. Shows recognition and reflection. Gives specific examples and backs up claims with evidence.* *Deliberately avoids a compassionate example for fear of crying (and because previously discussed). Perhaps not a wealth of compassionate experiences to draw upon. Experience of compassion is objectively poor, but perceived as a kindness. Downplays success. Selects quite a benign example of self-compassion, although important to them. Paragraphs become longer. Still collaborative but more rambling than others.* *Participant does not take the opportunity to talk about experiences of mental ill health, but does explore times of distress. No interpersonal difficulties explored. Unclear whether avoidance or just questions did not activate these experiences as not explicitly demanded.*
BP08	*Pauses feel collaborative – seems to be searching for a relevant example. Possible slip of past/present tense. Chooses weak example of compassion. Not particularly compassionate, but perceived as such. Possibly avoiding talking about something more challenging.* *Experience of rejection which made participant fearful of seeking support. Perhaps current anger about this. Evidence of continuity and growth. Reflection and formulation. Uses experiences to understand and make sense of problems and relationships. Very little in way reflection at the end - may be influenced by the interviewer's questioning as didn't specifically ask.* *No real sense of sealing over. No avoidance of discussing distress or negative experiences throughout the interview, although does not use the interview as an opportunity to talk about experiences of mental ill-health in particular.*
BP09	*Willing and curious to explore experiences, although little mention of periods of mental ill-health.*
P01	*Noticeably different interview technique used. No exploration of other words or why they relate to compassion. Interviewer moves things along more quickly.* *Participant jumps straight in and is willing to explore very painful experiences. High level of distress still felt - memories are upsetting to recall.*
P02	*Again different interview technique noted. Words not explored in as much depth. No experiences to draw on or subconsciously not going there?*

	Blocking memories? Begins to lack coherence and relevance then closes conversation down. Goes off track and loses relevance again. *Minimal example given of compassion (flowing towards participant) then minimised further. Becomes less coherent again.* *Interviewer doesn't probe for example of self-compassion. Participant cuts the interview short. Seems to be a combination of interviewer personal style and interviewer being responsive to the patient.*
P03	*Seems preoccupied with theme of relationships. Slightly inappropriate understanding of sympathy. Little attempt made at collaboration. Goes off track – evidence of avoidance or disorganised thinking? Mind seems chaotic. Evidence of tangential thinking - shows some recognition of this afterwards.* *Explicitly avoidant of talking about family - gives a warning not to ask. Shuts conversation down at least three times. Residual anger? Fear?* *It is unclear from the transcript how much the participant is demonstrating avoidance or preoccupation, or how much is indicative of a presentation of hebephrenic schizophrenia (although not severe). The narrative is incoherent and illogical at times, with some recurring themes and disinhibition. Participant has trouble sticking to subject and goes off on tangents, although often has insight into this afterwards. Demonstrates disorganised thinking, loses train of thought, loose associations, answers to unrelated questions, circumstantial, irrelevant details.*
CT02	*Immediate difference in interview technique and structure of interview. Spends a lot longer going over definition of compassion.* *High level of coherence and collaboration. Open about experiences, particularly alcoholism. No discussion of mental health issues. Little curiosity or engagement with understanding these. Lots about alcoholism and the impact of this. There is a sense that the participant did not spontaneously use the opportunity in this interview to discuss their mental health difficulties rather than being sealed off to discussing these should they arise. Participant is otherwise collaborative and open. This may just not have been the right interview for them.*
CT03	*Tendency to compartmentalise. Talks about alcohol problems as being in the past, then turning life around. Alcohol narrative - makes sense to talk about addiction in this way in terms of recovery (e.g. rather than psychosis). Less continuity, more isolation of experience.*
CT10	*Links made between past experiences and ongoing difficulties. Participant explicitly states that questions about childhood experiences would lead to freezing up. Then again other contradictions are made in the narrative when a stance is taken but evidence does not support it e.g. "I don't show my emotions much". No discussion of mental health difficulties other than an episode of self-harm and issues with trust. Trust is a recurring theme in the interview. Evidence of avoidance or perhaps a different interview may tap into mental health experiences more. It would be interesting to see whether the participant opened up or closed down.*

Appendix 2.10: MRP Proposal

Assessment:	**Major Research Project Proposal**
Title:	**Validating the Narrative Recovery Style Scale (NRSS) in a sample of individuals with serious mental illness**
Trainee:	**Gillian Fraser**
Matriculation number:	**0905125**
Date of Submission:	**16th April 2014**
Version number:	**4.2**
Word Count:	**4209 words**

ABSTRACT:

Background: Within the current literature, recovery style has largely been conceptualised as a two-dimensional construct, proposing that individuals tend towards an '*Integrative*' or '*Sealing Over*' style. Recent critique of this model identifies a limitation in its ability to account for common strategies that individuals employ in their recovery and suggests the addition of a third style of recovery: '*Ruminative Preoccupation*'. Researchers have developed a narrative-based measure of recovery style (NRSS) designed to provide a three-way classification of recovery style.

Aims: The current study aims to validate and examine the psychometric properties of the NRSS by examining associations with self-report measures of recovery style, coping style, and adult attachment patterns. The study also aims to describe patterns of recovery style across three groups of service users and examine differences between the groups.

Method: Approximately 45 participants with bipolar disorder, schizophrenia-spectrum disorders and complex trauma will complete a narrative interview of compassion. This will generate a transcript to which a narrative rating scale of recovery will be applied. Associations will be examined between the NRSS and the Recovery Style Questionnaire (RSQ), the Coping Inventory for Stressful Situations (CISS), and the Psychosis Attachment Measure (PAM).

INTRODUCTION:

Recovery Style

Recovery style refers to the attitudes that people hold towards their illness and how they cope with the experience of having an illness[1]. It is conceptualised as a personal process which involves acceptance, personal development and change, as opposed to an end-point at which a person is symptom-free[2]. Mayer-Gross first introduced the idea that individuals may have different styles of recovery in 1920[3]. He described the responses of psychosis patients and suggested that individuals tend to hold fairly fixed views about their illness and that these attitudes may influence the illness course and outcome.

McGlashan and colleagues developed the idea that patients hold different attitudes about their illnesses further. They identified two distinct styles of recovery - '*Integration'* and '*Sealing Over'* - based on the tape recorded narratives of a group of psychosis patients[4,5,6,7,8]. An integrative recovery style is characterised by the individual acknowledging the important effect their illness has had on their life. They accept responsibility for their psychotic experiences which may affect their self-esteem, perhaps resulting in shame, guilt, depression, confusion and self-doubt. Their psychotic experiences may contain highly personal themes and show some continuity with their previous lives. The individual may be able to identify both pleasure and pain associated with their illness and is curious to explore and understand their experiences, often eliciting the help of others to help do so. On the other hand, individuals who have a tendency to seal over during their recovery tend to discuss their psychotic experiences as isolated events with little significance to their lives. They take no responsibility for their experiences and may view themselves as a passive and helpless victim. No links are made between the psychotic experience and prior personal problems and the experience is viewed in entirely negative terms. The individual is disinclined to explore their illness for any source of meaning or information and prefers not to dwell on the past.

Early conceptualisations suggest that these styles represent two extremes on a continuum and that people gravitate towards one particular style of recovery which is relatively fixed and endures across the lifespan[1]. However, more recent thinking suggests that individuals may use a mixture of styles, perhaps even within the same psychotic episode. Moreover, studies indicate that recovery style *can* change over time[9], challenging the view that it is a fixed and enduring personality trait. In addition, there is evidence that recovery style may be susceptible to change through psychological therapy[10].

Using the two-factor model of recovery style described above, researchers have attempted to examine characteristics associated with each of the styles and the relationship between recovery style and functional outcome. A table summarising the findings is presented below:

Table 1: Summary of Recovery Style study outcomes

Author and Year	Findings
McGlashan & Carpenter (1981)[8]	No significant relationship between recovery style and clinical outcome.
McGlashan (1987)[1]	An integrative style was associated with better global outcome.
Drayton et al. (1998)[11]	Sealing over was associated with more self-evaluations, poorer parental relationships, and higher levels of post-psychotic depression.
Thompson et al. (2003)[9]	Sealing over was associated with lower levels of parental independence, significantly worse quality of life and higher levels of negative symptoms than integrative or a mixed recovery style.
Tait et al. (2003)[12]	Sealing over was related to significantly lower engagement with services.
Startup et al. (2006)[13]	Sealing over was related to higher rates of drop out in CBT.
Tait el al. (2004)[14]	Sealing over was associated with more negative self evaluations and more insecure identity.
Bell & Zito (2005)[15]	Sealing over was related to higher levels of cognitive disorganisation. Integration was associated with higher IQ, higher levels of emotional discomfort, better executive functioning.
Modestin et al. (2009)[16]	Sealing over was related to higher degree of overall severity of psychiatric disturbance and negative symptoms.
Fitzgerald (2010)[17]	Sealing over was associated with poorer insight. Integrative style was associated with greater insight.
Modestin et al. (2004)[18]	Integration was associated with an absence of negative symptoms and increased social competence.
Staring et al. (2011)[19]	Integrative style was associated with increased odds of remission.
Mulligan & Lavender (2010)[20]	Attachment was not associated with recovery style

These findings are generally consistent with McGlashan's view that an integrative style of recovery tends to have better outcomes than a sealing over style[1]. However the link does not appear to be simplistic and the direction of causality is by no means clear. Individuals with an integrative style have been shown to have higher IQ, better premorbid work/school stability and more motivation for treatment[1,15], whereas sealing over is associated with more adverse childhood experiences and higher levels of insecure attachment[14]. It is likely then that other variables such as an individual's developmental

history, attachment style and interpersonal context may mediate the relationship between recovery style and outcome.

McGlashan and colleagues' model appears to have been used as the foundation for all research in the field. However a recent study (MacBeth et al., unpublished manuscript) has identified a limitation of this model in accounting for common strategies that individuals employ in their recovery from psychosis. MacBeth and colleagues applied attachment theory[21] to the conceptualisation of recovery style and highlighted a conceptual overlap between the constructs of a) integration and secure attachment organisation and b) sealing over and insecure avoidant attachment. They proposed that McGlashan's model fails to recognise strategies which may have developed from an insecure preoccupied style of attachment; that is strategies based around worrying, preoccupation and rumination. Accordingly, they proposed the addition of a third style of recovery: '*Ruminative Preoccupation'* to the two-factor continuum model.

Macbeth et al. developed a narrative-based measure of recovery style (NRSS; Gumley & MacBeth, unpublished manuscript) designed to provide a three-way classification of recovery style. Using a mixed clinical sample (n=43), they found that sealing over was negatively associated with integration and ruminative preoccupation, and that ruminative preoccupation was negatively associated with integration. Clinically, they found that higher levels of integration were associated with fewer positive and negative symptoms, sealing over was associated with more negative symptoms, and that ruminative preoccupation was associated with more psychological symptoms. Their findings support a three-way classification of recovery style, however more research is needed in this area to validate the NRSS and explore the psychosocial characteristics associated with each of the three recovery styles.

Coping Style

Integration and sealing over are often described as 'coping styles' and are believed to be applicable to stressful life experiences other than psychosis. The terms recovery style and

coping style have been used interchangeably, although it is unclear whether they are indeed one in the same or whether they represent two distinct constructs.

Coping is defined as "*the constantly changing cognitive and behavioural efforts to manage the specific external or internal demands that are appraised as taxing or exceeding the resources of the person*"[22] (pg. 141). In common with recovery style, coping style can be conceptualised as a way of responding to a stressful experience. Coping is a multidimensional construct and classification of coping behaviours into subtypes has been carried out in various ways. If there is any agreement to be found, it is primarily regarding the basic distinction between *emotion-focussed* and *problem-focussed* coping strategies; the two dimensions of coping first identified by Folkman & Lazarus[23]. In general, emotion-oriented coping strategies involve efforts to regulate the emotional consequences of stressful events and include reactions that are self-oriented, such as emotional responses, self-preoccupation and fantasising. On the other hand, task-oriented coping strategies involve active efforts aimed at solving the problem, minimising its effects or altering the situation.

Endler & Parker[24,25] suggest that this two-way classification of coping does not account for common strategies that individuals employ in coping with stress; namely, avoidant strategies. They argue for a third dimension of avoidance-oriented coping which involves efforts to avoid a stressful situation. This model has received empirical support in the literature with factor analyses supporting the multidimensionality of the Coping Inventory for Stressful Situations (CISS)[24]; a measure designed to capture these three dimensions of coping.

It appears then that Endler & Parker's three classifications of coping style (task-focused, emotion-focused and avoidant) ostensibly maps onto the three-way conceptualisation of recovery style proposed by MacBeth et al. (integration, rumination and sealing over). In particular, there seems to be a similarity between the definition of sealing over (isolating experiences and showing a disinclination to explore illness for any source of meaning or information) and that of avoidant coping (evading the stressful situation). In contrast, rumination (preoccupation with the emotional aspects of illness) may overlap with emotion-focussed coping (reactions that are self-oriented, such as emotional responses, self-preoccupation and fantasising). The conceptual overlap between the constructs of

recovery style and coping style provides a useful way of testing the construct validity of the NRSS.

AIMS:

The study aims to validate and explore the psychometric properties of a narrative-based measure of recovery style (NRSS; Gumley & MacBeth, unpublished manuscript). The plan is to apply the NRSS to the transcripts of a narrative interview of compassion in order to explore recovery style in a sample of individuals with serious mental illness (bipolar disorder, psychosis and complex trauma). Associations with coping style, adult attachment patterns, and self-reported recovery style will then be examined. The study also aims to describe patterns of recovery style across the three groups of service users and examine differences between the groups.

HYPOTHESES:

Based on the current literature, it is hypothesised that the NRSS is a valid measure of recovery style which can provide a 3-way classification of recovery style. This will be established by correlating the NRSS with the RSQ, the CISS and the PAM. The following hypotheses are proposed:

NRSS and RSQ:

4. The NRSS Integration subscale will be positively correlated with the RSQ
5. The NRSS Sealing Over subscale will be negatively correlated with the RSQ
6. The NRSS Preoccupation subscale will be positively correlated with the RSQ

NRSS and CISS:

7. CISS Task-oriented coping will be associated with an integrative style of recovery
8. CISS Emotion-oriented coping will be associated with a ruminative preoccupation style of recovery
9. CISS Avoidance-oriented coping will be associated with a sealing over style of recovery

NRSS and PAM:

10. An integrative style of recovery will be negatively correlated with PAM attachment anxiety and attachment avoidance
11. A sealing over style of recovery will be positively correlated with PAM attachment avoidance
12. A ruminative style of recovery will be positively correlated with PAM attachment anxiety

PLAN OF INVESTIGATION:

Participants

The study plans to recruit 15 individuals who meet criteria for bipolar disorder. The data will be added to a sample of psychosis and complex trauma patients (n=27) previously collected to give a total sample n=43. The sample will be collected either through Mental Health Services in the NHS Greater Glasgow and Clyde (NHSGG&C) area or through the charity Bipolar Scotland.

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Individuals will meet ICD-10 criteria for Bipolar Disorder
- Individuals will be in contact with NHSGG&C mental health services
- Individuals will be aged between 16 and 64 years

Exclusion Criteria:

- Individuals who lack capacity to consent, as deemed by the clinical team
- Individuals whose current symptom severity impairs their ability to participate, as judged by the clinical team
- Individuals identified as having an Intellectual Disability or Autistic Spectrum Disorder

- Individuals who are not proficient in English language
- Individuals with a diagnosis of a neurological condition that would affect cognitive functioning
- Individuals who are intoxicated by alcohol or illegal drugs

Recruitment Procedures

Participation into this study will be voluntary. There will be three possible routes into the study for participants:

1. Individuals will be approached by a member of the relevant NHS service (e.g. keyworker) and provided with a Participant Information Sheet outlining the study. The staff member will ask the individual to agree for the researcher to meet with them.
2. Individuals will volunteer themselves following a presentation given at a drop-in session at Bipolar Scotland. They will leave their name and contact details and will be contacted afterwards by the researcher. The researcher will request contact details for the individual's keyworker so a pre-study risk assessment can be carried out.
3. Individuals will respond to an invitation placed on the Bipolar Scotland Facebook page or a written piece about the study on the Bipolar Scotland newsletter '*On the Level*'. They will be asked to email their name and contact details to the researcher and will be sent a Participant Information Sheet outlining the study. The researcher will request contact details for the individual's keyworker so a risk assessment can be carried out.

Written consent to participate in the current study will be sought from all participants regardless of the method of approach. Participants will be given the opportunity to ask questions, time to think about participating if they are unsure, and the right to refuse without it affecting their current treatment.

Measures

Demographic information such as age, gender, occupation, education will be collected from participants. Permission will be obtained to examine case notes to verify information gathered and collect additional information regarding diagnosis, duration of illness and current medication. The following measures will be administered:

- **Narrative Interview for Compassion-Revised** (NCS-R, unpublished manuscript). A recorded 30-minute semi-structured interview to measure participants' experience of compassion towards the self, from self to others and from others to self. The interview will be transcribed verbatim and scored using:
- **Narrative Recovery Style Scale** (NRSS; Gumley & MacBeth, unpublished manuscript). A framework which allows coding and analysis of narrative structure and content. The NRSS yields scores on a 9-point scale for Integration, Sealing Over and Ruminative Preoccupation subscales. The higher the score on each of these subscales, the greater the tendency of the narrative towards each style of recovery. The coding framework is not currently available in the public domain.
- **Coping Inventory for Stressful Situations (CISS)**[24]. A 48-item self-report scale for measuring the dimensions of Task, Emotion, and Avoidance-Oriented coping.
- **Recovery Style Questionnaire (RSQ)**[11]. A 39-item self-report questionnaire measuring recovery style. Total scores range from 1 to 6, with low scores reflecting integration and high scores reflecting sealing-over.
- **Psychosis Attachment Measure (PAM)**[26]. A self-rating measure containing sixteen items - eight items assessing attachment avoidance and eight items assessing attachment anxiety.
- **Altman Self-Report Mania Scale (ASRM)**[27]. A five-item self-report scale to assess the level of mania and hypomania symptoms in patients diagnosed with bipolar disorder.

Additional measures to be administered for the work of other trainees are:

- **Childhood Trauma Questionnaire** (CTQ, Bernstein & Fink, 1997).
- **Fears of Compassion Scales** (Gilbert et al., 2011).

- **Hospital Anxiety and Depression Scale** (HADS; Zigmond & Snaith, 1983).
- **Wechsler Test of Adult Reading** (WTAR; Wechsler, 2001).
- **Interpersonal Autobiographical Memory Task** (I-AMT; adapted from Williams & Broadbent, 1986).

Design

The study will use a cross-sectional mixed methods design with a within subjects condition and three between subjects groups.

Research Procedures

After informed consent has been taken, the researcher will meet with each participant on one or two occasions (participant's choice) lasting around 2-2.5 hours in total. Participants will be offered at least one 15 minute break per session during testing.

Data Analysis

Descriptive analyses will be carried out to identify psychosocial characteristics associated with each recovery style. All variables will be checked for normality and parametric/non-parametric analyses of within-subjects characteristics (e.g. gender, age) will be conducted accordingly.

The primary aim of this study is to explore the construct validity of the NRSS by obtaining associations with the RSQ, the CISS and the PAM. We will observe the patterns of correlations across these three sets of analyses using Pearson or Spearman correlations.

Justification of sample size

In the previous study by MacBeth et al., correlations of the NRSS of a magnitude between 0.31 and 0.55 were observed. Resources in the current study enable recruitment of 35-45 participants, with each trainee collecting 15 subjects. Table 2 illustrates a sensitivity

analysis carried out using G*Power[28], exploring the relationship between sample size, effect size and power, adopting a conventional significance level of alpha= .05.

Table 2: Sensitivity Analysis

Sample Size	Effect Size	Power
35	0.3	0.33
	0.5	0.64
	0.8	0.94
40	0.3	0.36
	0.5	0.69
	0.8	0.96
45	0.3	0.39
	0.5	0.74
	0.8	0.98

Based on these estimates, the power to detect medium and large effect sizes of 0.5 and above (based on Cohen[29]) is at least 0.64. For effect sizes below 0.5, the power is reduced to between 0.33–0.39 which may be inadequate. The estimation of effect sizes will support the planning of future studies including the planning of sample size.

Settings and Equipment

All interviews will be conducted on NHS staffed sites or Bipolar Scotland offices. All data will be anonymised and stored on a University of Glasgow laptop. Recording equipment and testing materials including response forms are required.

Health and Safety Issues

Researcher Safety Issues

Local and NHS health and safety procedures will be followed at all times. Research interviews will be carried out on staffed NHS sites or Bipolar Scotland offices where there is appropriate support and robust procedures for dealing with unforeseen events. Keyworkers will be contacted to assess risk before consenting participants.

Participant Safety Issues

Participants may be asked to talk about potentially distressing experiences in the interview but there will be no greater risk to participants than in routine clinical practice. Individuals will be made aware that they can stop the interview at any time or take a break should they become distressed. The Hospital Anxiety and Depression Scale will be used to screen for major depression and/or suicidal thinking. If a non-immediate issue is flagged, the researcher will agree a plan with the participant to share concerns with the participant's keyworker. Emergency telephone numbers will be provided for any participant deemed to be at immediate risk for suicide and duty services in the local mental health team will be informed. The study will end on a neutral measure (e.g. WTAR) so that the participant is brought back to a place of relative psychological safety. All interviews will be carried out on staffed sites where there is appropriate support for dealing with unforeseen events.

Ethical Issues

The current study is part of a wider project examining Compassion, Memory and Coping in a mixed sample of individuals with serious mental illness. Ethical approval is already in place to carry out the above procedures with individuals with bipolar disorder, psychosis and complex trauma recruited through CMHTs. An amendment will be submitted in order to recruit individuals through Bipolar Scotland.

Financial Issues

CISS Manual and Response Sheets are required and costs to cover photocopying of the other measures. Participant and researcher travel expenses within NHS Greater Glasgow and Clyde are requested.

Timetable

Timetable for completion of the project:

Task	**Subtasks**	**Deadline**
Proposal resubmission		**Mid Apr 2014**
Ethics amendment submission		**End Apr 2014**
Research Progress Meeting 1		**End Apr 2014**
Recruitment – presentations		**May 2014**
Recruitment – data collection		**Jun, Jul & Aug 2014**
Research Progress Meeting 2		**End Aug 2014**
Transcription		**Aug & Sep 2014**
Data analysis		**Sep & Oct 2014**
Write-up of chapters		**Oct, Nov & Dec 2014**
Research Progress Meeting 3		**End Oct 2014**
Research Portfolio Loose Bound Submitted		**End Dec 2014**
Viva		**Feb 2015**

Practical Applications:

Examining the psychometric properties of the NRSS may introduce a validated measure to the recovery style literature, thus leading to better quality research in the field.

Knowing more about recovery style may help us explore an individual's capacity to benefit from different treatment approaches as people may have a style which is facilitated by some and impeded by other approaches. The findings of Thompson et al.[9] challenge the view that recovery style is a stable trait, instead suggesting that recovery style can change over time. Since integration is associated with better functioning and outcome, it seems reasonable that interventions aimed at encouraging patients to become more integrative may be of clinical benefit. On the other hand, although the literature suggests that an integrative style may be associated with better outcomes, an individual's recovery style may be adaptive. McGlashan showed that good outcomes are possible with each style of recovery. Therefore the goal of treatment should perhaps not be altering a particular recovery style but tailoring interventions to recovery style. Either way, this study will contribute to the literature and the knowledge base surrounding recovery style.

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